Office of the Principal Scientific Adviser
to the Government of India

सत्यमेव जयते

सह-SANKALP

A resource book for empowering rural livelihood through Science and Technology



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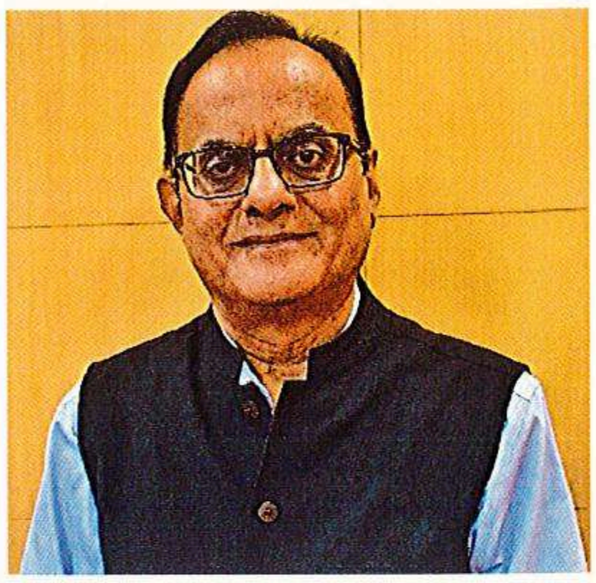
Disclaimer

This document compiles technologies shared by various Ministries and institutions. Each technology description reflects information provided by the originating agency. The compendium does not independently validate these technologies. Readers should contact the respective Ministry or institution for the latest specifications, operational guidelines, or licensing details.

अजय के. सूद
भारत सरकार के प्रमुख वैज्ञानिक सलाहकार
Ajay K. Sood
Principal Scientific Adviser to the Govt. of India

सत्यमेव जयते

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Preface

Science, Technology, and Innovation (STI) are foundational pillars of national progress and societal well-being. As India charts its course toward the ambitious vision of *Viksit Bharat @2047*, it is imperative to view scientific advancement not merely as a pursuit of discovery, but as a catalyst for real-world transformation. The true measure of progress lies in our ability to translate knowledge into resilient livelihoods, sustainable ecosystems, and inclusive growth.

The Mission on Science and Technology for Sustainable Livelihood Systems **hereafter referred as Mission *सह-SANKALP*** (**S**cience and **A**dvanced **N**etworks for **K**nowledge-driven **A**ction for **L**ivelihood **P**romotion) has been conceptualised with this objective. The mission represents a concerted effort to bring the benefits of science closer to people's everyday lives. It recognizes that sustainable development cannot be achieved in isolation; it requires convergence between scientific knowledge and indigenous wisdom, between public policy and local innovation, and between technological capability and community aspiration.

This Resource Book presents a curated compilation of science-based solutions developed across multiple sectors, including agriculture and allied activities, health, skill development, MSMEs, water and sanitation, and environmental sustainability. The technologies and models documented herein have been identified for their relevance to livelihood systems and their potential for deployment, adaptation, and scale. Collectively, they demonstrate how STI can enhance productivity and income while also contributing to resilience, dignity, and self-reliance at the community level.

Mission *सह-SANKALP* reflects the broader vision of a science-led, people-centric India, where knowledge systems are mobilised to address complex societal challenges in a coherent and coordinated manner. It is envisaged that this Resource Book will serve as a practical reference for policymakers, States and Union Territories, R&D institutions, practitioners, and implementation partners, and will support continued efforts to bridge the gap between scientific research and last-mile impact.

(Ajay K Sood)

Date: 3rd February 2026

डॉ. (श्रीमती) परविन्दर मैनी
वैज्ञानिक सचिव
Dr. (Mrs) Parvinder Maini
Scientific Secretary

सत्यमेव जयते

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Foreword

In today's complex and interconnected world, science, technology, and innovation (STI) are pivotal in building sustainable and inclusive livelihood systems. However, for scientific progress to deliver lasting societal value, it must be consciously aligned with the lived realities of people particularly communities whose livelihoods are closely linked to natural resources, local enterprises, and place-based economic systems. Bridging this gap between scientific capability and social need is essential for addressing contemporary development challenges.

Mission *सह-SANKALP* (Science and Advanced Networks for Knowledge-driven Action for Livelihood Promotion) has been conceptualised with this objective under the guidance of the Office of the Principal Scientific Adviser to the Government of India, and is being implemented in partnership with the Department of Science and Technology. The Mission adopts a whole-of-government and mission-mode approach, bringing together ten Union Ministries and Departments to align scientific and technological interventions with national development priorities. At its core, the Mission seeks to ensure that science-based solutions for livelihoods are demand-driven, inclusive, context-specific, and capable of deployment at scale.

This Resource Book is an important outcome of that collective effort. It presents a structured compilation of science-based technologies, models, and interventions drawn from across participating Ministries and institutions, spanning both farm and non-farm livelihood systems. This compilation goes beyond a mere listing of innovations; it is intended as a practical reference that supports States, implementing agencies, and partners in identifying, adapting, and deploying appropriate S&T solutions in diverse socio-ecological contexts.

The initiatives documented herein illustrate the breadth of India's public innovation ecosystem from climate-resilient agriculture, animal husbandry, and clean energy solutions to rural manufacturing, digital platforms, water and sanitation technologies, and enterprise-oriented interventions. Collectively, they demonstrate how science can be applied not only to enhance productivity and incomes, but also to strengthen self-reliance within livelihood systems.

The Office of the Principal Scientific Adviser remains committed to strengthening such inter-ministerial convergence, promoting innovation-led governance, and fostering partnerships between government, academia, and the private sector. By bridging knowledge with need, and innovation with inclusion, this Mission demonstrates how science can truly serve as a catalyst for sustainable and equitable growth.

(Parvinder Maini)

Dated : 04th February, 2026

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Office of the Principal Scientific Adviser to the Government of India

Executive Summary

The Mission is grounded in the understanding that livelihoods are sustained not by income alone, but by the combined strength of five interconnected capitals viz. natural, human, social, financial, and physical. By deploying science-based solutions that enhance these capitals in an integrated manner, ***सह-SANKALP*** aims to build resilience, reduce multidimensional poverty, and contribute to India's national development priorities, including the Sustainable Development Goals and the vision of ***Viksit Bharat @2047.*** Recognising the transformative potential of converging science, technology, and innovation with development practice and as recommended by the Prime Minister's Science, Technology and Innovation Advisory Council (PM-STIAC), the Office of the Principal Scientific Adviser (O/o PSA) initiated ***सह-SANKALP*** as a mission-mode national effort. The Mission brings together scientific and line Ministries and Departments to strengthen and scale rural and non-farm livelihood opportunities through ready-to-deploy Science and Technology Interventions (STIs).

As part of the Mission's preparatory phase, a comprehensive need assessment was undertaken to understand the requirements of implementing agencies working under existing government livelihood schemes. This exercise highlighted a parallel reality: over the years, a substantial number of scalable, field-tested, and impactful STIs have been developed by various Ministries and Departments of the Government of India, often supported by significant public investment; however, their deployment and uptake have remained limited. A major constraint has been the absence of an accessible, integrated platform that enables systematic discovery, demand-supply matching and coordination across institutions.

The ***सह-SANKALP Resource Book*** has been developed as a response to this gap. It presents a curated inventory of 357 ready-to-use STIs, collated from across participating Ministries and Departments viz. Council of Scientific and Industrial Research (CSIR), Department of Biotechnology (DBT), Indian Council of Agricultural Research (ICAR), Ministry of Earth Sciences (MoES), Ministry of Electronics and Information Technology (MeitY), Ministry of Labour and Employment, Ministry of Micro, Small and Medium Enterprises (MSME), Ministry of Science and Technology and Ministry of Textiles. The Resource Book represents a mature and action-oriented technology portfolio, with over 50% of the technologies at Technology Readiness Level (TRL) 9, indicating full commercialisation and readiness for immediate deployment. All technologies have been systematically mapped and matched with the expressed needs of livelihood-implementing agencies, ensuring that the inventory is both relevant and actionable.

In addition to maturity, affordability has been a key consideration. Most technologies are priced below ₹2 lakh, with a median unit cost of approximately ₹1.5 lakh, making them suitable for grassroots adoption by Self-Help Groups, cooperatives, and local implementing institutions.

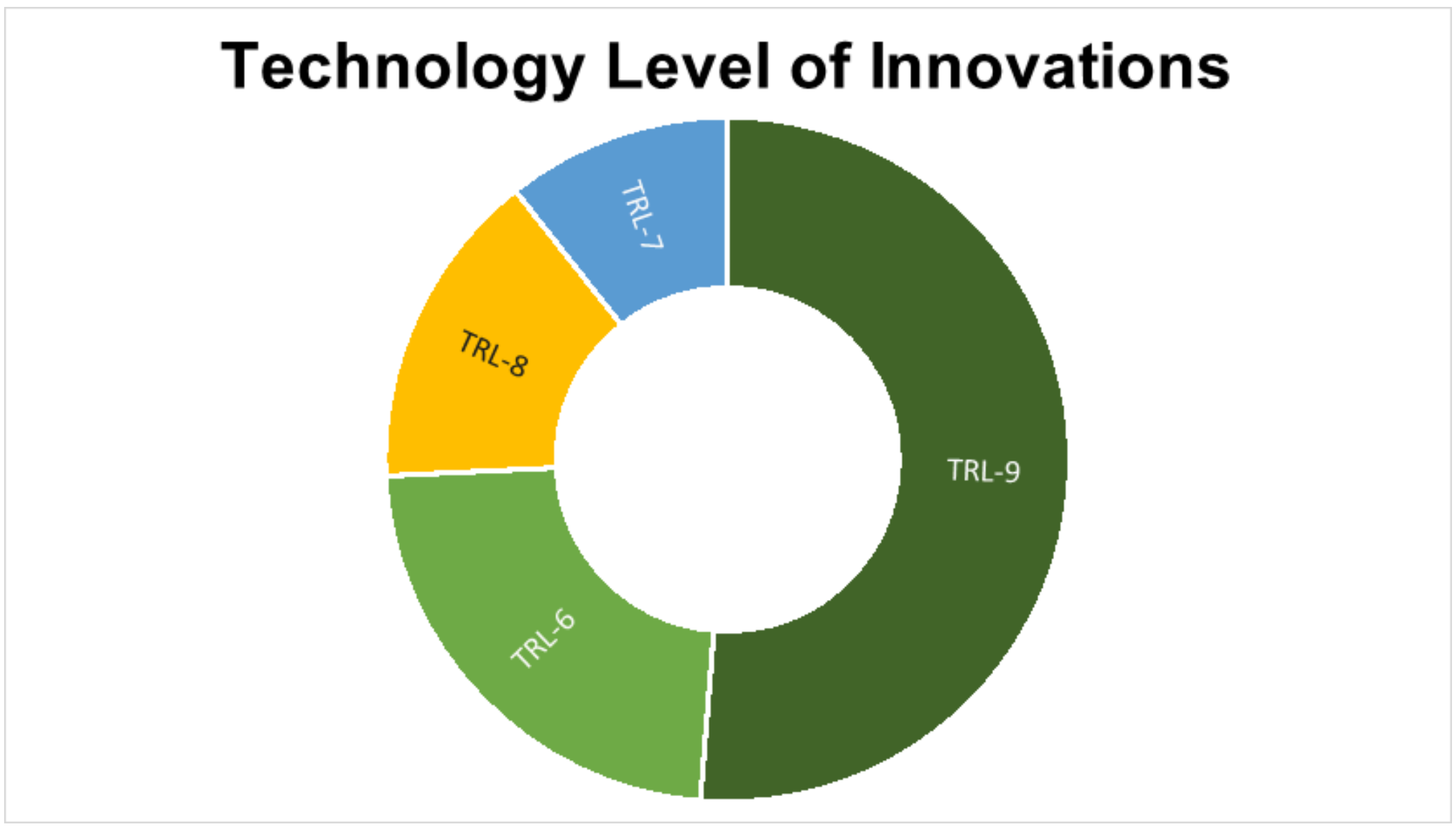


Figure 1: Technology Readiness Level of the STIs

A defining analytical feature of the Resource Book is its emphasis on technology readiness and deployment potential. As reflected in Figure 1, the inventory is dominated by mature and near-mature technologies, with the majority positioned at Technology Readiness Levels (TRL) 6 and above. This indicates that the technologies documented are not early-stage research outputs, but have been validated in relevant or operational environments and are suitable for pilot implementation, demonstration, and scale-up within existing livelihood programmes.

An analysis of deployment status indicates that while 29% of the innovations have already been deployed on ground, underscoring the significant opportunity for targeted deployment, piloting, and programme-level integration under the Mission.

The TRL distribution coupled with the deployment status underscores the Mission's strategic focus on actionability prioritising solutions that can be adopted by States and implementing agencies with minimal gestation, while also identifying a smaller subset of technologies that may require contextual adaptation or field-level demonstration prior to scale.

For effective navigation and decision-making, technologies in the Resource Book are organised across Farm and Non-Farm sectors, each further classified into five thematic categories (Figure 2). This categorisation highlights important patterns:

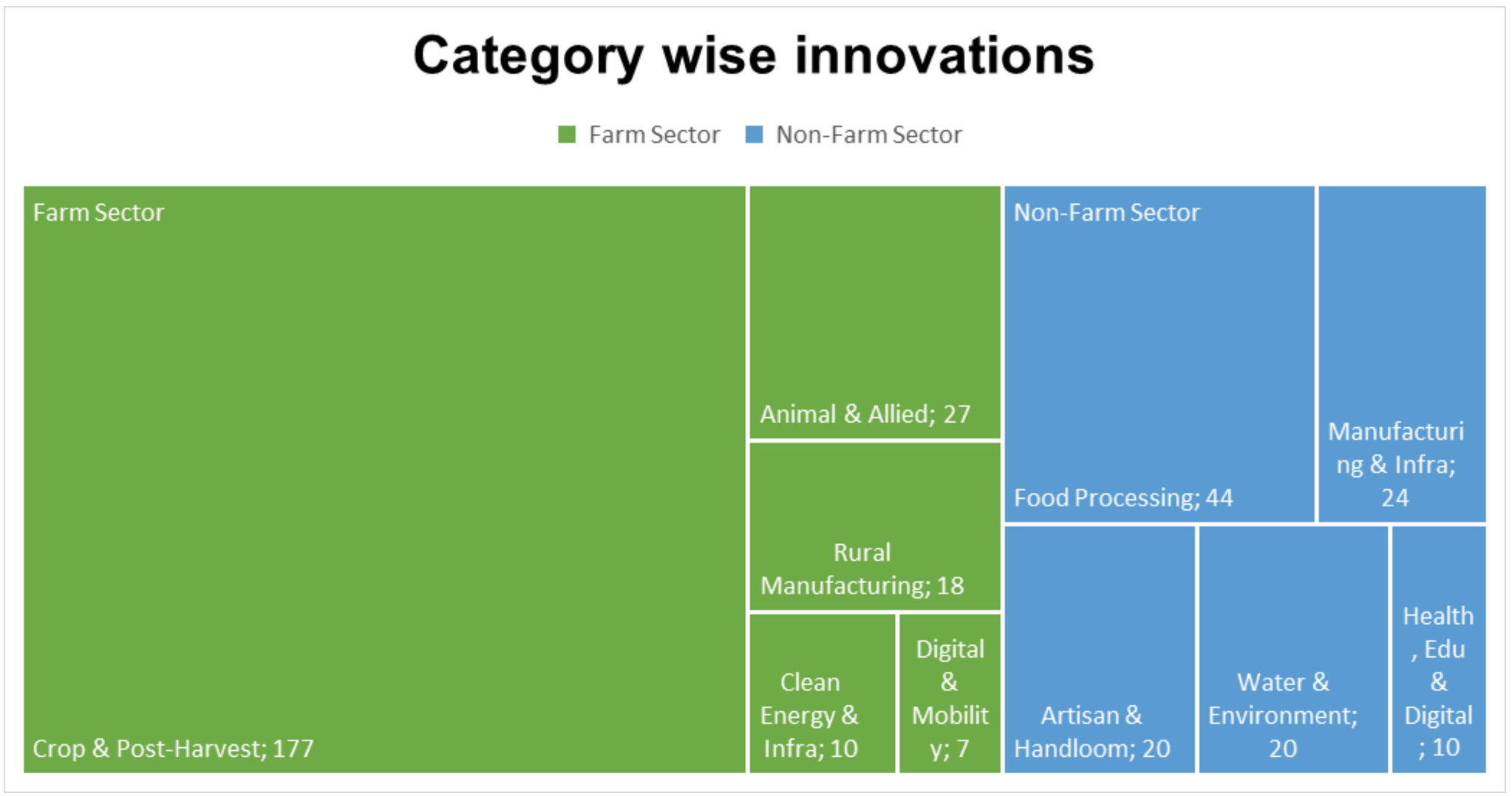


Figure 2: The Category Wise Innovation Break-up reflects a diversified spread of technologies across farm and non-farm categories.

Farm-sector innovations span integrated crop and post-harvest systems, animal husbandry and allied activities, clean energy and farm infrastructure, rural manufacturing and processing, and digital and mobility-enabled solutions indicating a shift beyond primary production towards value addition and resilience building.

Non-farm innovations cover artisan and handloom systems, food processing and storage, healthcare and skill-oriented technologies, manufacturing and infrastructure solutions, and water, sanitation, and environmental technologies reflecting the Mission's emphasis on livelihood diversification and non-agricultural employment opportunities.

This category-wise distribution enables implementing agencies to align technology choices with specific livelihood value chains, regional contexts, and programme priorities.

More than a catalogue, the book is designed as a practical guide for on-ground implementers. Each technology entry is presented in simple, accessible language and includes key operational details to support informed decision-making. For ease of navigation and use, technologies are categorised by Developing Ministry/Department, Scope of Application (Farm and Non-Farm), and Category of Technology, enabling users to quickly identify solutions suited to specific livelihood contexts (Figure 3).
To further enhance usability, each technology page features a scannable QR code that links to a digital platform providing extended information and direct access to the developer or nodal agency. This integrated physical-digital approach ensures that the Resource Book is not only informative, but also interactive and implementation-ready, reducing barriers to adoption and facilitating direct engagement between technology providers and users.

It is envisaged that the ***सह-SANKALP Resource Book*** will serve as a valuable reference for States and Union Territories, livelihood practitioners, development agencies, and other stakeholders seeking to leverage science and technology for sustainable transformation. By systematically organising high-TRL, deployment-ready STI interventions and aligning them with on-ground needs, the Resource Book supports mission-mode implementation and evidence-based scaling.
By enhancing the visibility, accessibility, and contextual relevance of publicly funded STI assets, the Resource Book aims to catalyse renewed momentum in livelihood development rooted in innovation, inclusivity, and long-term sustainability.

The conceptualisation, development, and drafting of the ***सह-SANKALP Resource Book*** were undertaken by the Mission team, comprising Dr Sangeeta Agarwal, Scientist-F, Ms Arundhati Mohanty, Project Manager, and Dr Dibyayan Deb, Project Manager.

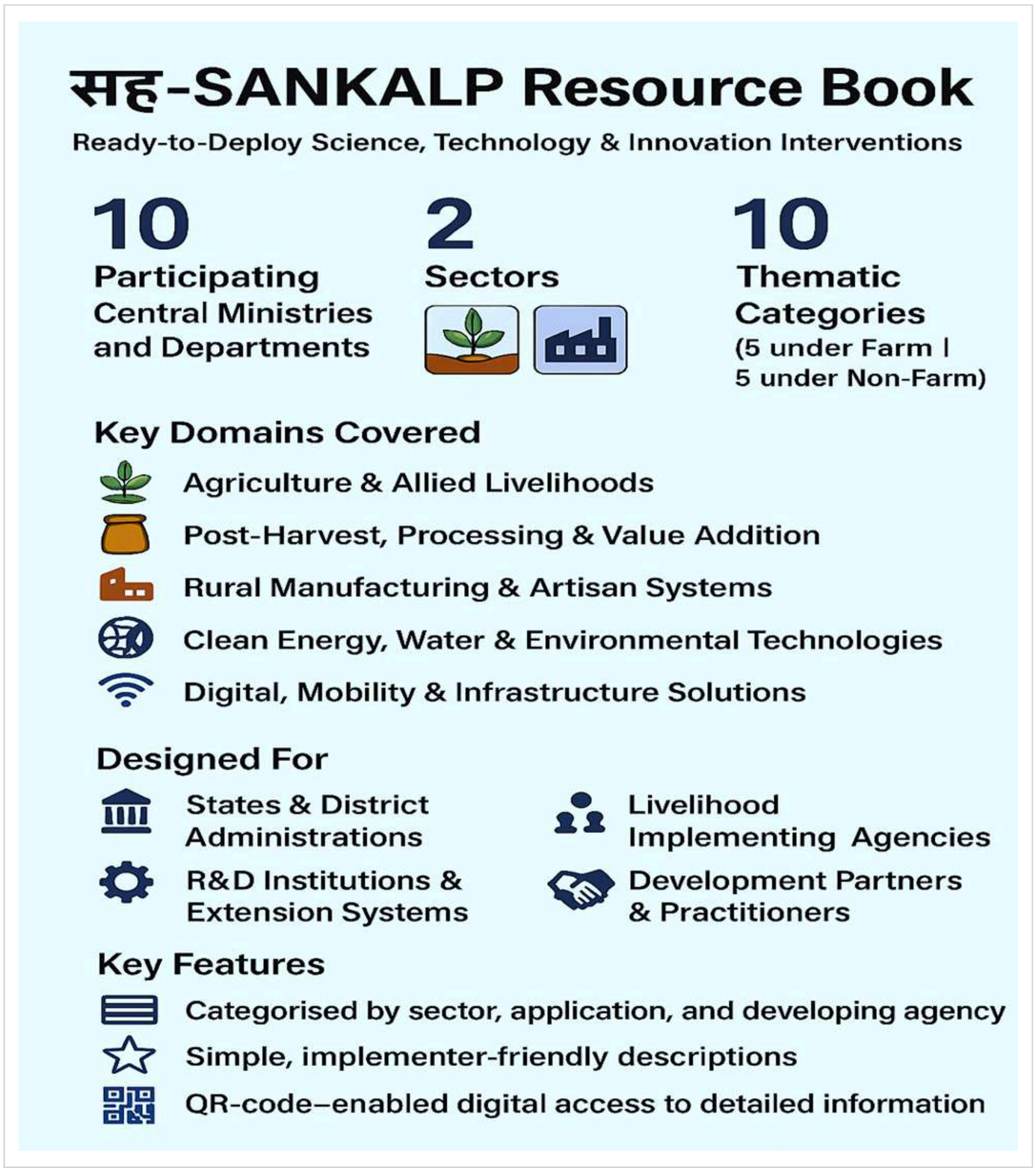


Figure 3: Analytics summary for the resource book

Table of Contents

Sector: Farm

01 Animal Husbandry & Allied Sectors 05-31

- Council of Scientific & Industrial Research 05
- Department of Biotechnology 06-11
- Department of Science and Technology 12
- Indian Council of Agricultural Research 13-29
- Office of the PSA to the Government of India 30-31

02 Clean Energy & Farm Infrastructure 35-44

- Council of Scientific & Industrial Research 35-36
- Indian Council of Agricultural Research 37-42
- Office of the PSA to the Government of India 43-44

03 Digital, Design & Mobility Innovations 47-53

- Council of Scientific & Industrial Research 47
- Indian Council of Agricultural Research 48
- Ministry of Labour and Employment 49
- Office of the PSA to the Government of India 50-53

04 Integrated Crop & Post-Harvest Systems 57-233

- Council of Scientific & Industrial Research 57-84
- Department of Biotechnology 85-91
- Department of Science and Technology 92-128
- Indian Council of Agricultural Research 129-224
- Office of the PSA to the Government of India 225-233

05 Rural Manufacturing & Processing Technologies 237-254

- Council of Scientific & Industrial Research 237-238
- Department of Science and Technology 239-244
- Indian Council of Agricultural Research 245
- Ministry Of Textiles 246
- Ministry of Micro, Small, and Medium Enterprises 247
- Office of the PSA to the Government of India 248-254

Sector: Non-Farm

01 Artisan, Handloom & Cultural Livelihoods 259- 278

- Council of Scientific & Industrial Research 259-264
- Department of Science and Technology 265
- Indian Council of Agricultural Research 266-268
- Ministry of Micro, Small, and Medium Enterprises 269-270
- Office of the PSA to the Government of India 271-278

02 Food Processing and Storage Systems 281-324

- Council of Scientific & Industrial Research 281-321
- Indian Council of Agricultural Research 322-324

03 Healthcare, Education & Digital Systems 327-336

- Council of Scientific & Industrial Research 327-330
- Department of Biotechnology 331-333
- Department of Science and Technology 334-336

04 Manufacturing, Infrastructure Mobility Systems 339-362

- Council of Scientific & Industrial Research 339-353
- Department of Science and Technology 354-361
- Office of the PSA to the Government of India 362

05 Water, Sanitation & Environmental Technologies 365-384

- Council of Scientific & Industrial Research 365-375
- Department of Science and Technology 376-379
- Ministry of Earth Sciences 380-381
- Ministry of Electronics and Information Technology 382-383
- Office of the PSA to the Government of India 384


SECTOR:
FARM

ANIMAL HUSBANDRY & ALLIED ACTIVITIES

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Council of Scientific & Industrial Research (CSIR)

Utilization of 'dry sea mix' knowhow

Overview

This patented technology enables the fractionation and recombination of seawater into its pristine form, allowing reconstitution or modification for diverse applications, including marine research and aquaculture in inland areas. It also supports mineralization of deficient waters such as rain or desalinated water and is cost-effectively deployable in solar saltworks using sea brine.



Functionalities

- Recreates authentic seawater composition in inland areas
- Enables growth of marine microbes, flora, and fauna
- Customises seawater composition for enhanced performance
- Mineralises or re-mineralises nutrient-deficient waters with calcium, magnesium, potassium, sulphate, and bicarbonate, including rainwater and desalinated water

Key Features

Precision fractionation – Separates seawater into three pure fractions

Versatile – Supports marine environments and mineral enrichment of various waters

Cost-effective – Optimised for large-scale use in solar salt works

Implementation Overview

No	6	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR CSMCRI Bhavnagar,
Central Salt & Marine Chemicals Research Institute
G B Marg Waghawadi Raod,
Bhavnagar, Gujarat, 364001

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Department of Biotechnology (DBT)

Amniotic membrane as a bio-scaffold duly enriched with the fetal stem cells and its conditioned media to promote wound healing

Overview

The Department of Biotechnology (DBT), Government of India, has supported the development of an amniotic membrane-based bio-scaffold for advanced wound healing applications. Developed under the Stem Cells and Regenerative Medicine Laboratory group at National Institute of Animal Biotechnology (NIAB), this innovation uses caprine amniotic membrane (cAM) and mesenchymal stem cell–derived conditioned media to promote tissue regeneration, reduce inflammation, and accelerate recovery.



Functionalities

- Utilises fresh and frozen-thawed amniotic membranes as bioscaffolds
- Delivers mesenchymal stem cells (MSCs) and extracellular matrix directly to wound sites
- Promotes cell-based regenerative therapies in large animals
- Supports surface wound healing and tissue regeneration

Key Features

Natural bioscaffold – Amniotic membrane supports tissue healing.

Dual therapy – Combines cAM with MSC-conditioned media

Healing – Provides extracellular matrix and growth factors that accelerate wound repair

Implementation Overview

No	7	10
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

BRIC-National Institute of Animal Biotechnology, Hyderabad, NIAB, Opp. Journalist Colony, Near Gowlidoddy, Extended Q City Road, Gachibowli, Telangana, 500032

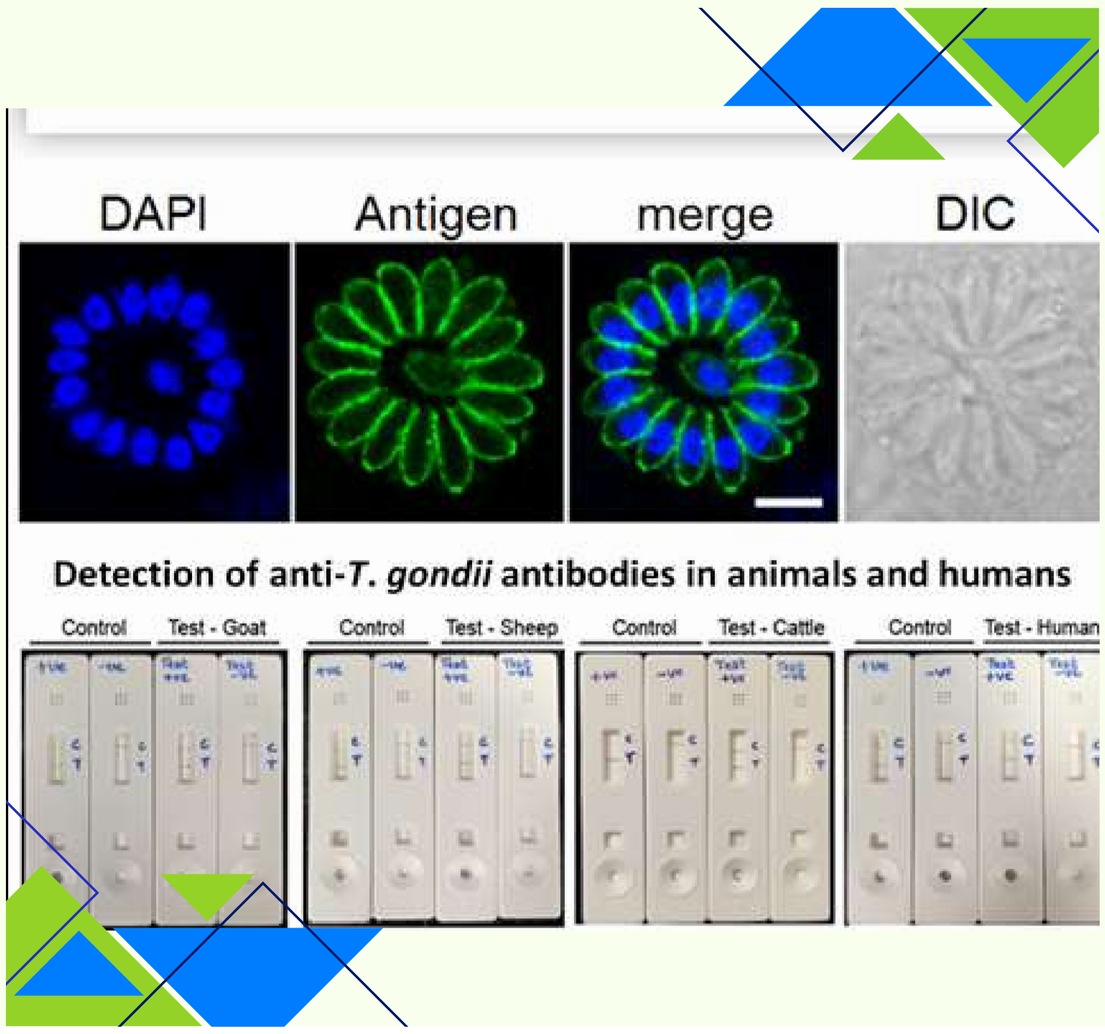
Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Department of Biotechnology (DBT)

Detection of *Toxoplasma gondii* Infection

Overview

Toxoplasmosis, caused by *Toxoplasma gondii*, affects humans and livestock, causing abortions and major economic losses. Endemic in India (30–40% seroprevalence), it poses significant public health risks. NIAB, Hyderabad, has developed a rapid, low-cost point-of-care (PoC) diagnostic test for detecting *Toxoplasma gondii* antibodies in humans and animals. The test provides results within minutes, supporting field-level surveillance.



Functionalities

- Detects antibodies of *T. gondii* in humans and animals
- Enables rapid point-of-care testing
- Supports surveillance under the One Health framework
- Reduces economic losses by early diagnosis

Key Features

Rapid – Provides quick results at point-of-care

Simple – Easy-to-use design suitable for field conditions

Supported – Technology supports the national One Health Program

Implementation Overview

No	6	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

BRIC-National Institute of Animal Biotechnology, Hyderabad, NIAB, Opp. Journalist Colony, Near Gowlidoddy, Extended Q City Road, Gachibowli, Telangana, 500032

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Department of Biotechnology (DBT)

A portable device for field level rapid antimicrobial sensitivity testing

Overview

Antimicrobial resistance (AMR) poses a major global health threat, complicating infection treatment and increasing mortality. To address this in the dairy sector, Department of Biotechnology (DBT) has developed CureCheck, a portable rapid antimicrobial sensitivity testing device that delivers results within 2 hours. It empowers farmers and veterinarians with timely, affordable, and field-ready solutions, supported by technical guidance.



Functionalities

- Detects antimicrobial sensitivity in bacterial infections
- Delivers results within 2 hours for timely antibiotic selection
- Facilitates field use without laboratory facilities
- Assists in reducing antimicrobial resistance in livestock management

Key Features

Portable – Designed for field deployment in remote areas

Affordable – Costs <₹50 per test

Supported – Technical guidance available for use and adoption

Implementation Overview

No	8	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

BRIC-National Institute of Animal Biotechnology, Hyderabad, NIAB, Opp. Journalist Colony, Near Gowlidoddy, Extended Q City Road, Gachibowli, Telangana, 500032

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Department of Biotechnology (DBT)

Subclinical and Clinical Mastitis Diagnosis through assessment of Milk

Overview

A novel DIY somatic cell counting kit developed for mastitis detection and milk quality assessment enables rapid, affordable, and portable testing. Using nano-adsorbed paper with magnetic nanoparticles, it delivers results within 10 minutes. Supported with technical guidance, the kit is priced at ₹25/test and is industry-transferred for validation.



Functionalities

- Detects somatic cells in milk for early mastitis diagnosis
- Assesses milk quality quantitatively without sophisticated equipment
- Delivers results within 10 minutes through nanoparticle aggregation
- Operates at a low detection limit of 25,000 cells/mL

Key Features

Innovative – First to apply magnetic nanoparticle detection for mastitis

Affordable – One-time device; ₹25/test, 6-month shelf life.

Supported – Technical guidance available for adoption and usage

Implementation Overview

No	8	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

BRIC-National Institute of Animal Biotechnology, Hyderabad, NIAB, Opp. Journalist Colony, Near Gowlidoddy, Extended Q City Road, Gachibowli, Telangana, 500032

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Department of Biotechnology (DBT)

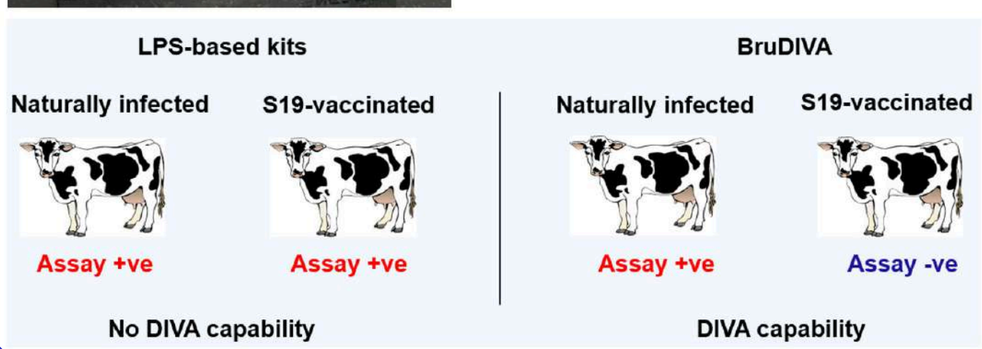
Kits and devices for diagnosis of brucellosis and differentiation between infected and vaccinated animals

Overview

The Bacterial Pathogenesis Laboratory at NIAB developed indigenously IVD kits for detecting animal and human brucellosis using a protein candidate from *Brucella*. These kits are cost-effective, DIVA-capable, and industry-transferred for optimisation and commercialisation. Technical support is available for adoption and deployment.



BruDIVA: Indirect ELISA for Brucellosis – Differentiates Infected from Vaccinated Animals (DIVA)



Functionalities

- Detects *Brucella* infection in animals and humans
- Differentiates vaccinated (*B. abortus* S19) from naturally infected cattle
- Operates as indirect ELISA and lateral flow assay formats
- Enables rapid, accurate, and cost-effective diagnosis

Key Features

Innovative – Uses a unique Brucella protein with DIVA capability

Affordable – Cost-effective for farmers and field deployment

Supported – Technical guidance provided for adoption and commercialisation

Implementation Overview

No	8	30
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

BRIC-National Institute of Animal Biotechnology, Hyderabad, NIAB, Opp. Journalist Colony, Near Gowlidoddy, Extended Q City Road, Gachibowli, Telangana, 500032

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Department of Biotechnology (DBT)

IndiGau – India's first cattle genomic chip

Overview

NIAB developed INDIGAU, a high-density SNP chip with 788K markers specifically for indigenous cattle. It provides 97.4% polymorphic markers, enabling accurate genotyping and identification of purebred and graded animals. Technical support is available for adoption, data interpretation, and integration into breeding programs.



Functionalities

- Genotypes indigenous cattle breeds accurately
- Identifies purebred and graded animals
- Serves as a reference for desi cattle populations and facilitate breeding and conservation programs
- Integrates with existing genomic databases for research

Key Features

Innovative – World's largest cattle SNP chip with 788K markers

Accurate – High-resolution 97.4% polymorphic markers for indigenous breeds

Supported – Technical guidance provided for adoption and interpretation

Implementation Overview

67	9	14
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

BRIC-National Institute of Animal Biotechnology, Hyderabad, NIAB, Opp. Journalist Colony, Near Gowlidoddy, Extended Q City Road, Gachibowli, Telangana, 500032

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Department of Science and Technology (DST)

Polyherbal eco-friendly technology for tick infestation

Overview

Tick infestation severely impacts livestock health and farmer incomes. To address this, NIF-India has developed a standardized herbal formulation using Neem and Nagod. It provides an eco-friendly, cost-effective, and sustainable solution recommended by veterinary universities, reducing dependence on costly chemical acaricides.



Functionalities

- Controls tick infestations in livestock effectively
- Reduces protozoan infections and associated health risks
- Promotes improved milk production and animal productivity
- Provides an eco-friendly and low-cost alternative to chemical acaricides

Key Features

Herbal composition – Uses widely available Neem and Nagod extracts

Sustainable solution – Environmental ly safe and inexpensive

DIY application – Recommended as a package of practices by veterinary authorities

Implementation Overview

Yes	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Indian Council of Agricultural Research (ICAR)

Organic Trace Mineral Supplementation for Improved Pig Health & Productivity

Overview

This technology provides organically chelated trace minerals designed to enhance nutrient absorption and overall productivity in pigs. Unlike inorganic salts that break into reactive ions and bind to feed components, organic minerals remain stable in the gut, improving bioavailability, supporting growth, immunity, and reproduction, while reducing nutrient waste and environmental pollution.



Functionalities

- Improves bioavailability of essential trace minerals in pig diets
- Reduces mineral excretion, minimising environmental pollution
- Enhances feed intake, growth rate, reproductive performance, and immunity
- Supports formulation and quality assessment of pig feed

Key Features

Enhanced Absorption – Organic minerals boost nutrient uptake

Environmental Safety – Reduces mineral excretion and associated pollution

Productivity Boost – Improves feed efficiency, growth, and reproductive outcomes in pigs

Implementation Overview

100	9	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-National Research Centre on Pig, Indian Council of Agricultural Research, Guwahati, Assam, 781131

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Indian Council of Agricultural Research (ICAR)

PolyPlus: Low-Cost Balanced Feed for Polyculture Systems

Overview

Poly Plus Feed is a low-cost polyculture feed developed by partially replacing expensive fish meal with locally available ingredients like sunflower cake, mung husk, rice bran, and pulse husk. It achieves comparable growth and Feed Conversion Ratio (FCR) while providing scientific and technical guidance for effective use.



Functionalities

- Promotes growth and feed efficiency in polyculture systems
- Ensures stable performance with partial replacement of fish meal
- Supports cost reduction without compromising fish growth or FCR
- Enhances utilisation of unconventional local ingredients like sunflower and pulse husk

Key Features

Cost-effective – Uses locally available ingredients

Efficient – Matches performance of higher fish meal feed

Supported – Backed by scientific and technical guidance

Implementation Overview

Yes	9	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute of Brackishwater Aquaculture, 75, Santhome High Road, Chennai, Tamil Nadu, 600028

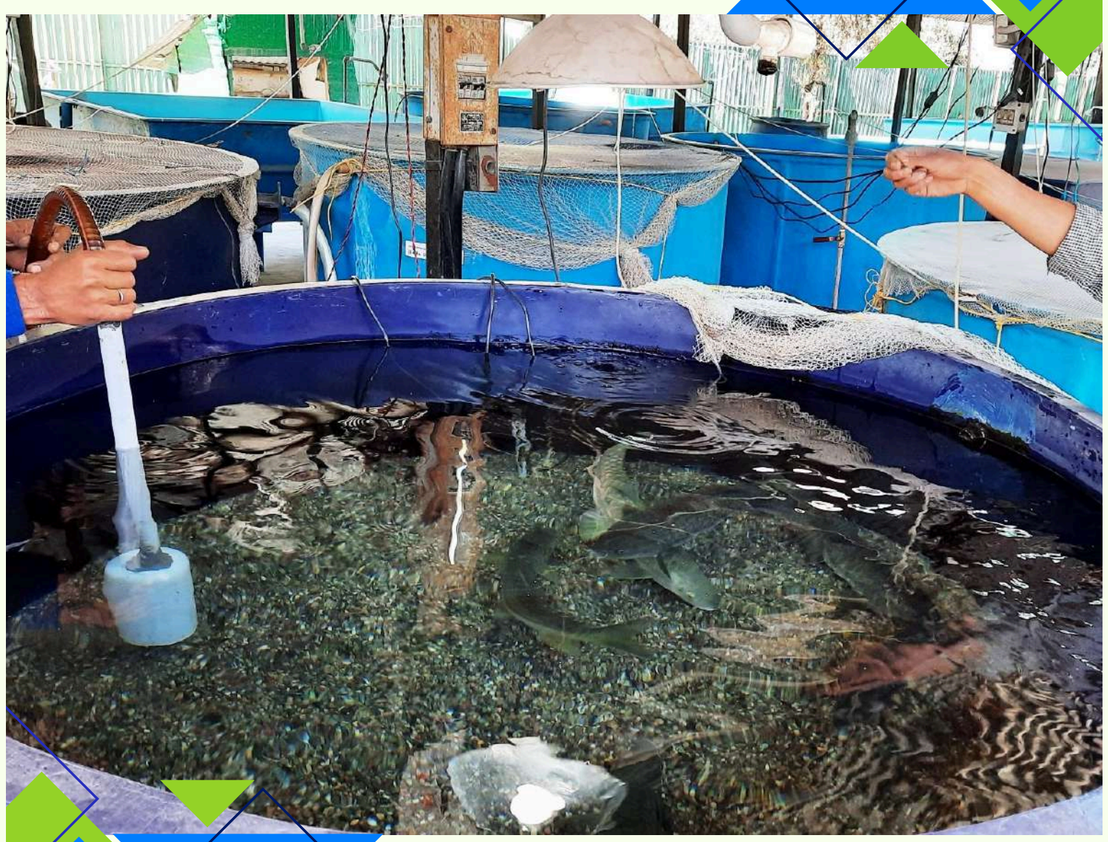
Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Indian Council of Agricultural Research (ICAR)

Year-Round Captive Breeding Technology for Golden Mahseer (*Tor putitora*)

Overview

ICAR-DCFR has developed a patented technology enabling captive maturation and year-round multiple breeding of the endangered Golden Mahseer. Using controlled photo-thermal regimes, customized diets, and broodstock management, the system produces robust seeds for conservation and aquaculture. This breakthrough supports species recovery, coldwater fisheries development, and livelihood opportunities in Himalayan regions.



Functionalities

- Promotes efficient maturation and breeding of Golden Mahseer
- Ensures standardised hatching and high-quality seed production
- Supports brood bank development for conservation and rehabilitation
- Enhances skill development through hands-on hatchery training

Key Features

Patented Protocol – Standardized, validated breeding method

Conservation-Focused – Supports species recovery efforts

Supported – Provides hands-on training and technical guidance

Implementation Overview

Yes	9	15
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR - Directorate of Coldwater Fisheries Research, Bhimtal, Anusandhan Bhavan, Bhimtal, Uttarakhand, 263136

Sector: **Farm**

Category : **Animal Husbandry & Allied Activities**

Indian Council of Agricultural Research (ICAR)

Recirculating Aquaculture System (RAS) for Intensive Rainbow Trout Farming

Overview

ICAR-DCFR's recirculating aquaculture technology enables efficient rainbow trout farming (DCFR EC-RAS-1) in unconventional locations. It reduces water usage to under 1 m^3/kg, increases productivity to over 40 kg/m^3 and shortens culture duration. Validated over three years, it supports rapid, multiple cropping cycles with complete technical and operational assistance.



Functionalities

- Promotes efficient rainbow trout farming
- Ensures high productivity with low water usage
- Supports multiple yearly crop cycles
- Enhances farm setup and operational skills

Key Features

Innovative – Uses recirculating aquaculture technology

Efficient – Reduces land, water, and culture duration

Supported – Provides technical guidance and risk management

Implementation Overview

No	9	30
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR - Directorate of Coldwater Fisheries Research, Bhimtal, Anusandhan Bhavan, Bhimtal, Uttarakhand, 263136

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Indian Council of Agricultural Research (ICAR)

Specialized Brooder Feed for Enhanced Rainbow Trout Reproduction

Overview

ICAR-DCFR's specialized rainbow trout brooder feed (DCFR PerforMAX-B) improves gonadal development, synchronizes maturation, and enhances fecundity and fertilization rates. It ensures high-quality offspring with uniform embryonic and larval development across key stages. The feed significantly strengthens reproductive efficiency and hatchery performance. Detailed feeding schedules and management guidelines are provided for consistent results.



Functionalities

- Promotes synchronised gonadal development
- Ensures higher fecundity and fertilisation rates
- Supports uniform embryonic and larval growth
- Enhances offspring quality and survival

Key Features

Effective – Boosts reproductive performance in trout

Comprehensive – Improves embryonic and larval development

Supported – Provides feeding schedules and management guidance

Implementation Overview

40	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR - Directorate of Coldwater Fisheries Research, Bhimtal, Anusandhan Bhavan, Bhimtal, Uttarakhand, 263136

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Indian Council of Agricultural Research (ICAR)

High-Performance Rainbow Trout Starter Feed

Overview

ICAR-DCFR's rainbow trout starter feed (DCFR PerforMAX-S) delivers 50–90% higher weight gain and over 85% survival across sites, outperforming conventional feeds. With an efficient Feed Conversion Ratio (FCR) of 0.8–1.1 and minimal wastage, it shortens nursery rearing from 75–90 days to 45–60 days, enabling faster growth, improved productivity, and reliable early-stage trout farming.



Functionalities

- Promotes rapid growth and efficient weight gain
- Ensures high survival rates in nursery stages
- Supports reduced feed wastage and improved FCR
- Enhances accelerated development and nursery management

Key Features

Effective – Surpasses conventional trout starter feeds

Efficient – Shortens nursery duration and streamlines rearing

Supported – Provides feeding schedules and management guidance

Implementation Overview

250
Deployed

9
Technology Readiness Level (TRL)

1
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR – Directorate of Coldwater Fisheries Research, Bhimtal, Anusandhan Bhavan, Bhimtal, Uttarakhand, 263136

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Indian Council of Agricultural Research (ICAR)

High-Efficiency Rainbow Trout Grower Feed

Overview

ICAR-DCFR's rainbow trout Grower feed (DCFR PerforMAX-G) enables over 30% faster growth than conventional diets, with an excellent FCR of 0.9–1.1. It shortens culture duration to 9–12 months, improves flesh quality, and enhances nutrient content. The technology significantly boosts unit productivity and farmer profit margins, supporting sustainable and profitable trout farming.



Functionalities

- Promotes faster growth and efficient FCR
- Ensures shorter culture duration to market size
- Supports improved flesh quality and nutrient content
- Enhances profitability and sustainable trout farming

Key Features

Effective – Accelerates growth and improves FCR

Efficient – Reduces rearing time for portion-sized fish

Supported – Provides feeding schedules and management guidance

Implementation Overview

600	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR – Directorate of Coldwater Fisheries Research, Bhimtal, Anusandhan Bhavan, Bhimtal, Uttarakhand, 263136

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Indian Council of Agricultural Research (ICAR)

Mango based poultry farming system

Overview

This integrated farming system combines poultry rearing with mango orchards to enhance farm income and reduce production costs. Demonstrated in Malihabad, the model significantly lowers fertilizer and pesticide expenses while generating additional revenue from poultry. It offers a highly profitable, sustainable livelihood option for small and marginal farmers.



Functionalities

- Promotes integrated poultry-mango farming for higher income
- Ensures a reduction in chemical fertiliser and insecticide costs
- Supports additional net gains per acre annually
- Enhances the livelihood of small and marginal farmers

Key Features

Profitable – Provides significant additional net returns

Sustainable – Reduces dependency on chemical inputs

Effective – Demonstrated successfully in farmers' fields

Implementation Overview

No	8	4
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute for Subtropical Horticulture, Lucknow, Uttar Pradesh, 226101

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Indian Council of Agricultural Research (ICAR)

Plankton Plus: Biofertilizer from Aquaculture Waste

Overview

Plankton Plus, developed by ICAR-CIBA, is an eco-friendly bio-fertiliser made by upcycling aquaculture sludge and fish waste. It boosts plankton production, supports healthy blooms, and converts waste to wealth under Swachh Bharat initiatives, ensuring sustainable aquaculture for fish and shrimp farming.



Functionalities

- Promotes plankton growth for healthy aquaculture systems
- Ensures eco-friendly recycling of aquaculture waste
- Supports sustainable fish and shrimp production
- Enhances resource efficiency through a waste-to-wealth approach

Key Features

Innovative – Developed from nutrient-rich sludge and fish waste

Cost-effective – Indigenous product reducing input costs

Sustainable – Proven efficient in multiple aquaculture systems

Implementation Overview

Yes	9	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute of Brackishwater Aquaculture, 75, Santhome High Raod, R. A. Puram, Chennai, Tamil Nadu, 600 028

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Indian Council of Agricultural Research (ICAR)

CIRB-Artificial Insemination Gun

Overview

CIRB-Artificial Insemination Gun is designed to prevent cold shock during semen insemination in cattle and buffalo. By maintaining optimal temperature, it preserves sperm motility, prevents acrosome damage, and enhances conception rates, especially in cold environments. Post-commercialisation support ensures long-term adoption and effectiveness.



Functionalities

- Prevents cold shock in semen during insemination
- Improves fertilisation success in cattle and buffalo
- Provides training, maintenance, and technical support for users
- Ensures continuous product improvement and wide-scale adoption

Key Features

Temperature- Safe – Prevents sperm damage during insemination

Performance-Oriented – Enhances conception rates significantly

Support-Driven – Backed by training, maintenance, and upgrade services

Implementation Overview

No	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR – Central Institute for Research on Buffaloes, Hisar, Haryana, 125001

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Indian Council of Agricultural Research (ICAR)

Digital Artificial Vagina (AV) for Temperature-Controlled Semen Collection

Overview

The Digital Artificial Vagina (AV) developed ensures high-quality semen collection by maintaining optimal AV temperature using an integrated sensor that guides real-time adjustments. Suitable for both young and mature bulls, it prevents temperature-related semen deterioration, improves collection efficiency, and supports national semen demand. The technology is licensed for commercialization with comprehensive training and technical support.



Functionalities

- Maintains optimal AV temperature during semen collection
- Allows adjustment for young and mature bulls' needs
- Sensors does not interfere with collection, washing, or sterilisation
- Provides training, technical support, and continuous improvements

Key Features

Precision Monitoring – Inbuilt sensor ensures optimal AV temperature

Enhanced Quality – Improves semen quality and collection efficiency

Support Framework – Training, technical help, and upgrades provided

Implementation Overview

No	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR – Central Institute for Research on Buffaloes, Hisar, Haryana, 125001

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Indian Council of Agricultural Research (ICAR)

Portable Field Spermoscope for On-Site Semen Quality Assessment

Overview

The Field Microscope (Spermoscope) developed is a portable, power-free device for on-site evaluation of sperm motility, enabling timely assessment of semen quality for improved AI (Artificial Insemination) success. It also supports quick field diagnostics—parasites, fecal examinations, and reproductive disorders—helping farmers and AI technicians enhance conception rates and overall livestock health in diverse environments.



Functionalities

- Evaluates sperm motility on-site, even in remote or power-deficient areas
- Assists in diagnosing parasites, endometritis, and trypanosoma (Surra)
- Operates efficiently in hot and cold environments without electricity
- Supports livestock health monitoring through multipurpose field use

Key Features

Portable design – Handy, lightweight, and operates without electricity

AI support – Ensures high semen quality and improved conception rates

Livestock health utility – Multipurpose use for parasite and disease diagnosis

Implementation Overview

No	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR – Central Institute for Research on Buffaloes, Hisar, Haryana, 125001

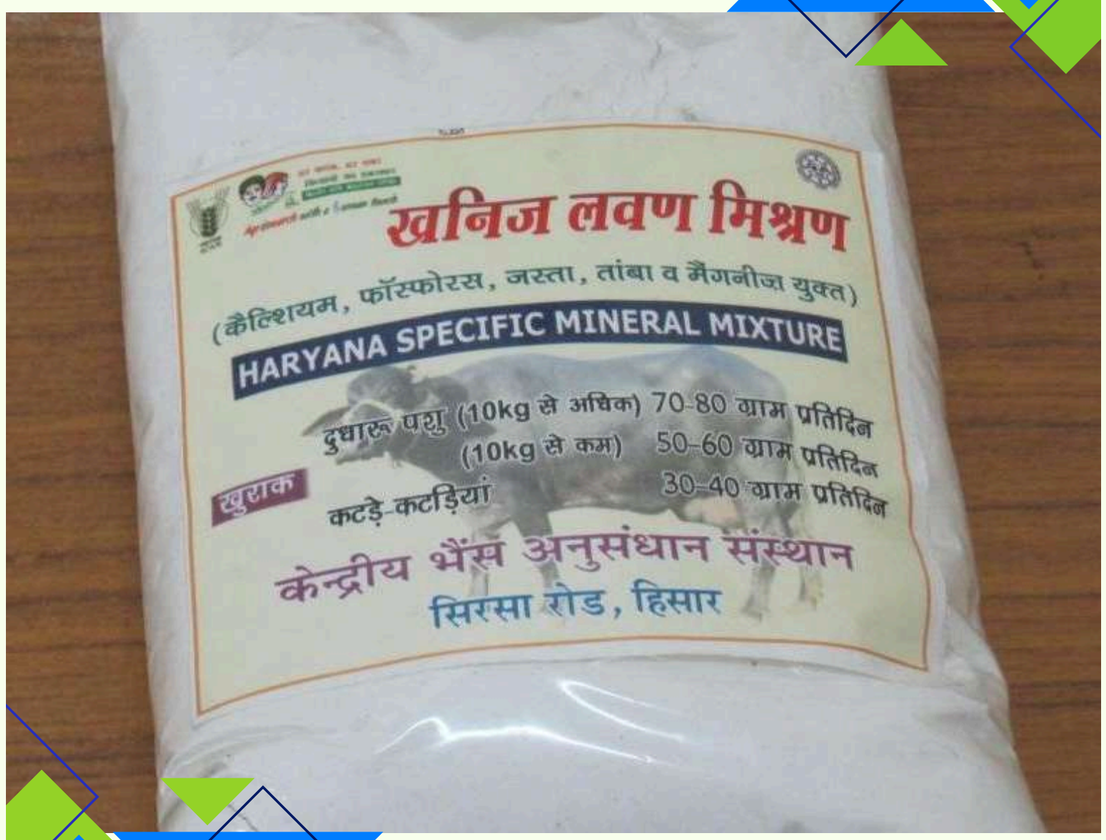
Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Indian Council of Agricultural Research (ICAR)

Area-Specific Mineral Mixture (ASMM) for Enhanced Animal Productivity and Fertility

Overview

ASMM is a scientifically formulated mineral mixture developed from region-specific deficiencies in soil, water, and feed resources. Tailored for high-producing animals, especially Murrah buffaloes in Haryana, it corrects key micronutrient gaps to improve growth, milk yield, reproductive efficiency, and address widespread anestrous issues in buffalo-dominant production systems.



Functionalities

- Corrects deficiencies of key minerals (Zn, Mn, Cu, Fe, Mg) in livestock nutrition
- Improves reproductive efficiency by reducing anestrous conditions
- Enhances overall animal health, growth, and productivity
- Supports progressive buffalo husbandry with superior Murrah germplasm

Key Features

Targeted formulation – Developed after surveys of soil, plant, and feed micronutrients

Reproductive boost – Corrects mineral gaps causing 50–60% anestrus in buffaloes

Field-proven impact – Widely adopted by progressive animal keepers in Haryana

Implementation Overview

No	7	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR – Central Institute for Research on Buffaloes, Hisar, Haryana, 125001

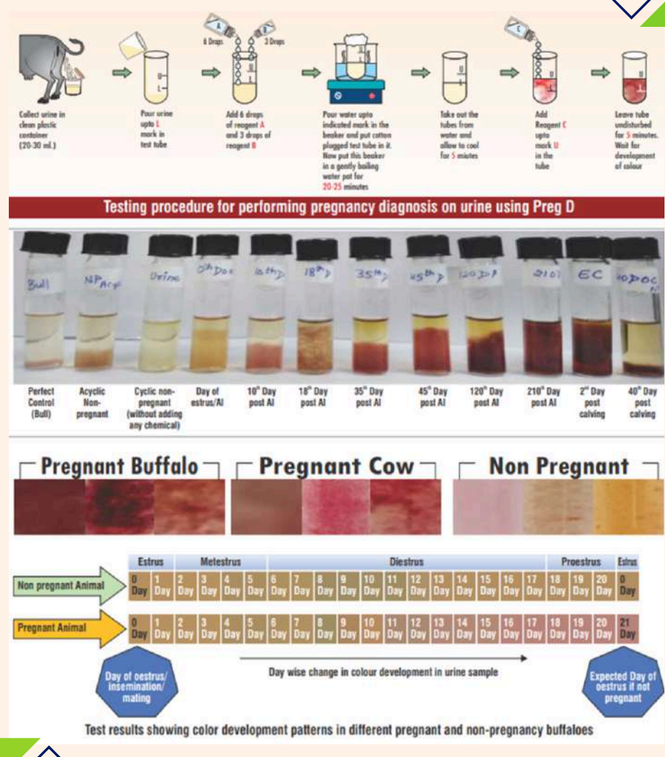
Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Indian Council of Agricultural Research (ICAR)

Preg-D: Urine-Based Rapid Pregnancy Detection Kit for Cattle & Buffalo

Overview

Preg-D is a urine-based, colour-reaction diagnostic kit that enables quick, on-farm pregnancy detection in cattle and buffalo without any equipment. It helps farmers accurately identify non-pregnant animals early, improving breeding efficiency, reducing calving intervals, and supporting better herd management—especially in remote areas with limited veterinary access.



Functionalities

- Enables quick, on-farm pregnancy detection without veterinary intervention
- Identifies non-pregnant animals early for timely management
- Provides reliable results with simple visual interpretation
- Reduces dependency on instruments, making it ideal for rural use

Key Features

Non-invasive and simple – Urine color test detects pregnancy

Farmer-friendly – No equipment needed, results visible to the naked eye

Rural utility – Useful where veterinary access for pregnancy diagnosis is limited

Implementation Overview

No	7	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR – Central Institute for Research on Buffaloes, Hisar, Haryana, 125001

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Indian Council of Agricultural Research (ICAR)

Rumen Ecosystem Stimulants and Methane Inhibitors (RESMI): Feed Additive for better Buffalo Productivity

Overview

RESMI (Rumen Ecosystem Stimulants and Methane Inhibitors) is a composite feed additive designed to reduce enteric methane emissions in buffalo while improving rumen function and overall productivity. It lowers methane output by up to 30%, enhances feed efficiency, and boosts growth and milk production by around 15%, supporting climate-smart and profitable buffalo farming.



Functionalities

- Reduces methane emissions from buffalo by up to 30%
- Stimulates rumen ecosystem for efficient digestion
- Enhances growth, feed conversion, and overall performance
- Boosts milk production and yield consistency by around 15%

Key Features

Sustainability-focused – Lowers greenhouse gas emissions in livestock sector

Performance enhancer – Improves animal growth, feed efficiency, and milk yield

Farmer benefit – Supports long-term productivity and profitability

Implementation Overview

No	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR – Central Institute for Research on Buffaloes, Hisar, Haryana, 125001

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Indian Council of Agricultural Research (ICAR)

Immunochromatographic Pork Detection Kit (IPDK) for Rapid Field Testing

Overview

The IPDK is a rapid, field-deployable immunochromatographic strip test designed to detect pork in raw, processed, or mixed meat samples. Using a simple 10-minute extraction and a 15-minute assay, the kit delivers clear visual results without laboratory equipment, enabling easy, on-site identification of pork adulteration for regulatory, industrial, and consumer use.



Functionalities

- Enables rapid extraction of target analytes in field conditions
- Detects pork content through sandwich immunochromatographic strip test
- Reduces dependency on laboratory infrastructure for meat testing
- Provides quick visual results within 15 minutes for decision making

Key Features

Fast workflow – 10-minute extraction and 15-minute total assay time

Detection Method – Sandwich immunochrom atographic strip

Sample Types – Raw, processed, and mixed meat

Implementation Overview

No	7	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR National Meat Research Institute,
Chengicherla, Hyderabad,
Telangana, 500092

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Indian Council of Agricultural Research (ICAR)

Point-of-Care Chicken Authentication Kit Using Rapid Lateral Flow Detection

Overview

The technology enables rapid detection of chicken content in raw, processed, and mixed meat without requiring a laboratory setup. Using a field-deployable extraction buffer, trituration, and filtration, the qualitative lateral flow assay provides quick results, ensuring reliable verification of meat authenticity within minutes.



Functionalities

- Enables rapid extraction of target analytes in field conditions
- Detects chicken content through sandwich lateral flow assay
- Reduces dependency on laboratory infrastructure for meat testing
- Provides quick visual results for on-site decision making

Key Features

Ultra-simple workflow: - 10-minute extraction; no laboratory setup required

Portable and user-friendly - Lateral flow strip ensures quick, equipment-free results

Sample Types – Raw, processed, and mixed meat

Implementation Overview

No	7	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR National Meat Research Institute,
Chengicherla, Hyderabad,
Telangana, 500092

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Office of the PSA to the Government of India

Indigenous Sheep Hair Shearing Device

Overview

The indigenous sheep hair shearing device developed by IIT Delhi offers a robust, low-cost mechanized alternative to hand scissors, enabling closer shearing and improved staple length required by the Indian wool industry. Designed to enhance shepherds' livelihoods, it delivers efficient, reliable shearing and supports high-quality yarn production.



Functionalities

- Enhances wool harvesting efficiency
- Increases staple length for high-quality yarn
- Reduces manual labour and drudgery
- Improves shepherds' income and productivity

Key Features

Economic – Low-cost and reliable mechanised device

Versatility – Produces wool suitable for the Indian wool industry

Supported – Technical guidance and post-commercialisation support provided

Implementation Overview

Yes	7	15
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Delhi, RuTAG Lab, Block-II, Room No. 247, Department of Mechanical Engineering, New Delhi, 110016

Sector: **Farm**
Category : **Animal Husbandry & Allied Activities**

Office of the PSA to the Government of India

Portable Cow Lift for Assisting a Downer Cow

Overview

This innovative support system assists injured cattle or those with weak leg muscles to stand, enabling timely medical treatment and improving chances of recovery. It prevents loss of milk production, protects valuable breeds, and provides economic relief to rural farmers. Maintenance support is available for smooth operation.



Functionalities

- Assists injured or weak cattle in standing for treatment
- Enhances recovery rates and prevents livestock losses
- Saves milk yield and preserves the value of high-breed cattle
- Supports rural farmers by reducing economic burdens

Key Features

Practical – Enables safe standing of cattle during medical care

Beneficial – Prevents production loss and ensures animal welfare

Supported – Requires regular oiling of joints/gearbox and annual cloth replacement

Implementation Overview

22	8	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Bombay,
CTARA, Mumbai,
Maharashtra,
400076

CLEAN ENERGY & FARM INFRASTRUCTURE

Sector: **Farm**
Category : **Clean Energy & Farm Infrastructure**

Council of Scientific & Industrial Research (CSIR)

Pine Needle Briquetting

Overview

This technology provides a sustainable solution for managing pine needles in the mid-Himalayan region by converting them into high-calorific fuel briquettes. The briquetting machine, with a 1-ton/day capacity, provides a viable substitute for coal while generating rural livelihoods through community-based operations and promoting forest fire mitigation. Support includes establishing supply chains and industry linkages.



Functionalities

- Processes pine needles into high-calorific value briquettes
- Reduces forest fire risks by utilising surplus pine needles
- Substitutes coal with sustainable biogenic fuel in industries
- Generates livelihood opportunities for local communities

Key Features

Productive – 1 ton/day briquette capacity

Sustainable – Reduces forest fire risk and develops local livelihood

Supported – Assistance in supply chain setup and industry linkages

Implementation Overview

Yes	6	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR Indian Institute of Petroleum, P.O. Mohkampur, Haridwar Road, Dehradun, Uttarakhand -248005, Dehradun, Uttarakhand, 248001

Sector: **Farm**
Category : **Clean Energy & Farm Infrastructure**

Council of Scientific & Industrial Research (CSIR)

Neerdhur Improved Cookstove

Overview

Developed by CSIR–NEERI, NEERDHUR is a multi-fuel improved cookstove designed for high thermal efficiency (33.33%) and reduced emissions (CO: 3.78 g/MJd; TPM: 340.10 mg/MJd). Approved by MNRE and certified by BIS (IS 13152: Part 1, 2013), it delivers over 50% fuel savings, 60% lower emissions, and enhanced user safety.



Functionalities

- Provides clean and efficient biomass combustion
- Enables multi-fuel adaptability and flexibility
- Reduces emissions and improves indoor air quality
- Enhances fuel savings and operational safety

Key Features

Efficient – 33.33% thermal efficiency, low emissions

Durable – Long-lasting chamber and grate design

Versatile – Works with wood, charcoal, biomass

Implementation Overview

30000	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-National Environmental Engineering Research Institute, CSIR-NEERI, Nagpur, Maharashtra, 440020

Sector: **Farm**
Category : **Clean Energy & Farm Infrastructure**

Indian Council of Agricultural Research (ICAR)

Solar-Powered Stone-Pitched Jholakundi Irrigation System for Summer Vegetable Cultivation

Overview

The stone-pitched Jholakundi with a solar-operated irrigation system, developed under an RKVY-funded project by ICAR–IISWC Sunabeda and the Directorate of Soil Conservation, Odisha, enables year-round vegetable cultivation in the Eastern Ghats. Designed as a deep, circular water storage structure equipped with a 1 HP solar pump, it enables farmers to cultivate vegetables even during peak summer when water scarcity is severe, thereby enhancing livelihoods, water efficiency, and environmental sustainability.



Functionalities

- Provides water storage for summer vegetable cultivation
- Facilitates solar-powered irrigation, reducing dependence on grid electricity
- Promotes sustainable farming practices in highland regions
- Reduces water wastage and ensures year-round irrigation

Key Features

Farmer Empowerment – Promotes self-reliant irrigation access

Climate Resilience – Conserves water and reduces emissions

Scalable Model – Replicable across dryland and hilly terrains

Implementation Overview

60	8	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Indian Institute of Soil and Water Conservation, Dehradun, Sunabeda, Odisha, 763002

Sector: **Farm**
Category : **Clean Energy & Farm Infrastructure**

Indian Council of Agricultural Research (ICAR)

CISH TRAP-3: Automatic UV Light Trap for Pest Monitoring

Overview

CISH TRAP-3 is an automatic electrical UV light trap with a ray restrictor and regulated illumination. It features sensors, UV and LED lights, control board, and accessories, designed to minimize vacuum cleaning effects and improve insect trapping across multiple crops including vegetables, mango, cotton, sugarcane, pulses, and rice.



Functionalities

- Promotes efficient insect trapping with regulated UV illumination
- Ensures reduced vacuum cleaning effect and insect escape
- Supports multi-crop application across vegetables, fruits, and pulses
- Enhances automation through sensors and control systems

Key Features

Innovative – Combines UV light, LED, sensors, and a ray restrictor

Versatile – Effective in multiple crops and environments

Supported – Includes the main control board and automated operation

Implementation Overview

Yes	9	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute for Subtropical Horticulture, Rehmankhera, P. O. Kakori, Lucknow, Uttar Pradesh, 226101

Sector: **Farm**
Category : **Clean Energy & Farm Infrastructure**

Indian Council of Agricultural Research (ICAR)

Optimized Recharge Filter Design for Cost-Effective Groundwater Replenishment

Overview

This technology provides an optimized design framework for recharge filters used in artificial groundwater recharge through dug wells. Using hydrological balance equations and non-linear optimization, it determines the most cost-efficient filter dimensions. The optimized design reduces construction costs while improving recharge efficiency, making groundwater augmentation more economical and scalable for field use.



Functionalities

- Promotes cost-effective recharge filter design
- Ensures optimal sizing using non-linear programming
- Supports minimisation of construction costs
- Enhances the practical field application of filters

Key Features

Analytical – Derived expressions based on the hydrological water balance

Optimised – Cost-effective design using programming software

Proven – Successfully applied in field conditions

Implementation Overview

No	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Indian Institute of Soil and Water Conservation (IISWC), Dehradun, Research Centre, Kota, Rajasthan, 324002

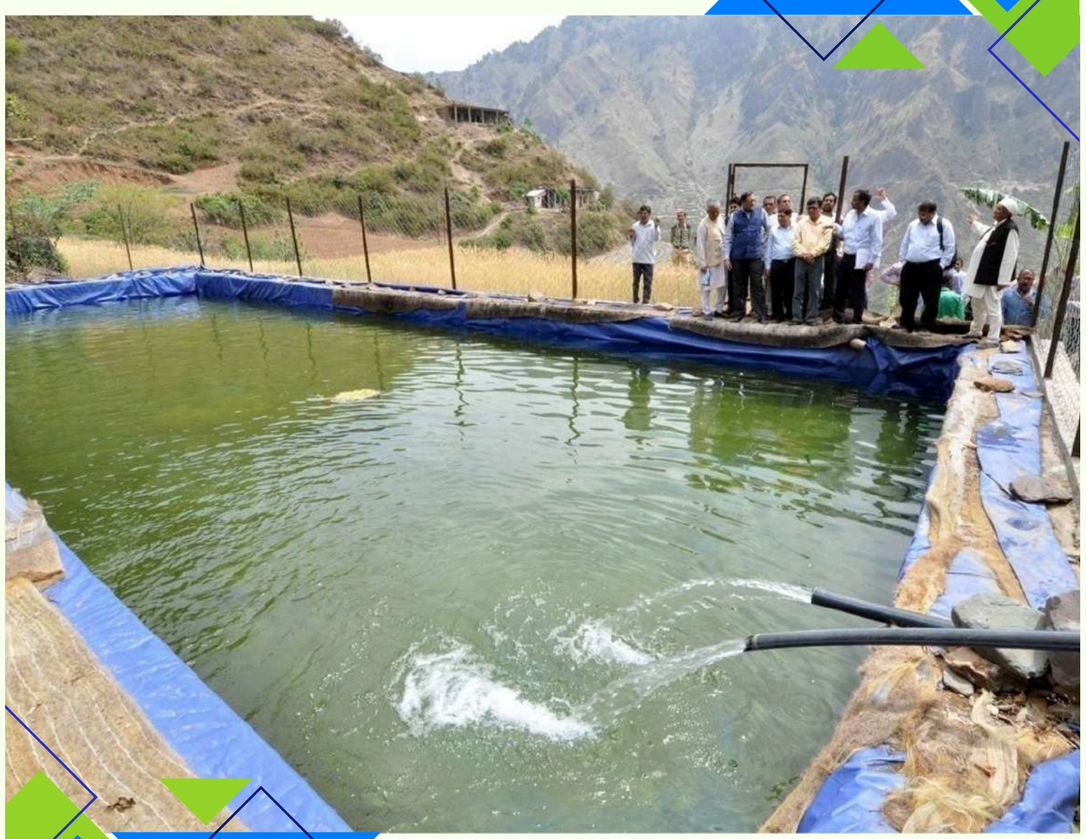
Sector: **Farm**
Category : **Clean Energy & Farm Infrastructure**

Indian Council of Agricultural Research (ICAR)

Participatory Spring Water Management Model for Enhanced Water Security in Hilly Regions

Overview

This community-driven spring water management model uses inter-watershed water transfer through gravity-fed HDPE pipelines to supply water from surplus to deficit areas in hilly regions. The system is 76% more cost-effective than conventional methods and enables year-round water availability, crop diversification, and significant increases in productivity and farmer income.



Functionalities

- Transfers water from surplus to deficit watersheds via HDPE pipelines
- Provides a 76% cost reduction compared to conventional systems
- Ensures year-round sustainable water availability
- Supports crop diversification and productivity enhancement

Key Features

Water efficiency – Triples water availability in deficit areas

Crop impact – 12.7–47.7% yield increase; 4.1× rise in production

Farmer benefit – Income increased by 4.28 times

Implementation Overview

No	6	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Indian Institute of Soil and Water Conservation, 218 Kaulagarh Road, Dehradun, Uttarakhand, 248195

Sector: **Farm**
Category : **Clean Energy & Farm Infrastructure**

Indian Council of Agricultural Research (ICAR)

Tractor operated drip lateral and plastic mulch layer-cum-planter

Overview

This tractor-operated machine integrates raised bed formation, drip lateral installation, plastic mulch laying, and seed planting in a single pass. With high field efficiency (74%) and significant labour and cost savings, it offers a fast payback period and improved productivity. The technology is ready for commercialization with full post-licensing support for manufacturers.



Functionalities

- Forms raised beds and lays drip laterals with precision
- Lays plastic mulch and plants seeds in one operation
- Reduces labour requirements and operational costs significantly
- Provides high field efficiency, payback within 1.9 years

Key Features

Field Efficiency – 0.2 ha/h capacity with 74% efficiency at 1.7 km/h

Cost Benefits – Saves 26 man-days/ha (89%) and Rs. 6,600/ha (43%)

Profitability – Payback period of 1.9 years and breakeven at 70 h/year

Implementation Overview

No	9	30
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute of Agricultural Engineering, Amd, Block-A, ICAR-CIAE, NABI Bagh, Berasia Road, Bhopal, Madhya Pradesh, 462038

Sector: **Farm**
Category : **Clean Energy & Farm Infrastructure**

Indian Council of Agricultural Research (ICAR)

Staggered Contour Trenching (SCT) Technology for Horti–Silvi–Pastoral Restoration in Ravine Ecosystems

Overview

This SCT technology revitalizes degraded Chambal ravine landscapes through staggered contour trenches combined with horticultural, silvicultural, and pasture components. By integrating *Phyllanthus emblica, Cenchrus ciliaris grass*, and *Dendrocalamus strictus*, the system conserves runoff, curbs soil erosion, and boosts productivity, achieving high economic returns with a B:C ratio of 3.05:1.



Functionalities

- Enhances landscape restoration by stabilizing deep ravine slopes using horticultural and pasture species
- Improves water conservation through staggered contour trenches that capture and store runoff
- Reduces soil erosion significantly, promoting long-term soil health and ecological recovery
- Boosts farm productivity and income via integrated fruit, bamboo, and fodder production

Key Features

High resource efficiency - 86% runoff conserved and 124% reduction in soil erosion

Enhanced yields - 84% increase in *Phyllanthus emblica* fruit-equivalent productivity

Economically viable- Strong profitability with a B:C ratio of 3.05:1

Implementation Overview

No	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Indian Institute of Soil and Water Conservation, Dehradun, Kota, Rajasthan, 324002

Sector: **Farm**
Category : **Clean Energy & Farm Infrastructure**

Office of the PSA to the Government of India

Natural Fiber Surface Water Storage Tank Technology

Overview

This technology enables construction of low-cost, durable water storage tanks using locally available natural fibers such as coconut and banana. Developed by RuTAG IIT Bombay and promoted through mason training by Jalvardhini, it offers an eco-friendly alternative to concrete tanks, with successful installations up to 2 lakh liters across Maharashtra and Karnataka.



Functionalities

- Provides low-cost storage solution for water in rural areas
- Utilises natural fibres to ensure eco-friendly construction
- Empowers local masons through training and skill development
- Enhances accessibility with large-scale adoption across states

Key Features

Natural Fibre Construction – Uses coconut and banana fibres for tank building

Cost-Effective Design – Construction cost as low as Rs. 2–3 per liter

Supported – Annual maintenance guidance for crack filling with cement

Implementation Overview

43
Deployed

8
Technology Readiness Level (TRL)

3
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Bombay,
CTARA, Mumbai,
Maharashtra,
400076

Sector: **Farm**
Category : **Clean Energy & Farm Infrastructure**

Office of the PSA to the Government of India

Ground Water Level Measuring Device

Overview

The low-cost groundwater level measuring device developed by RuTAG, IIT Delhi, provides farmers with an affordable solution to measure water depth reliably. Designed as an electric switch-type device, it ensures accessibility and ease of use. Post-commercialisation support is available through RuTAG, IIT Delhi.



Functionalities

- Measures groundwater levels accurately
- Reduces dependence on expensive equipment
- Enhances accessibility for rural farmers
- Supports sustainable water resource management

Key Features

Device – An electric switch-type device with battery and beeper

Measurement – Marked cable for precise depth measurement

Supported – Post-commercialisation guidance and technical support provided

Implementation Overview

Yes	8	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Delhi, RuTAG Lab, Block-II, Room No. 247, Department of Mechanical Engineering, New Delhi, 110016

DIGITAL, DESIGN & MOBILITY INNOVATIONS

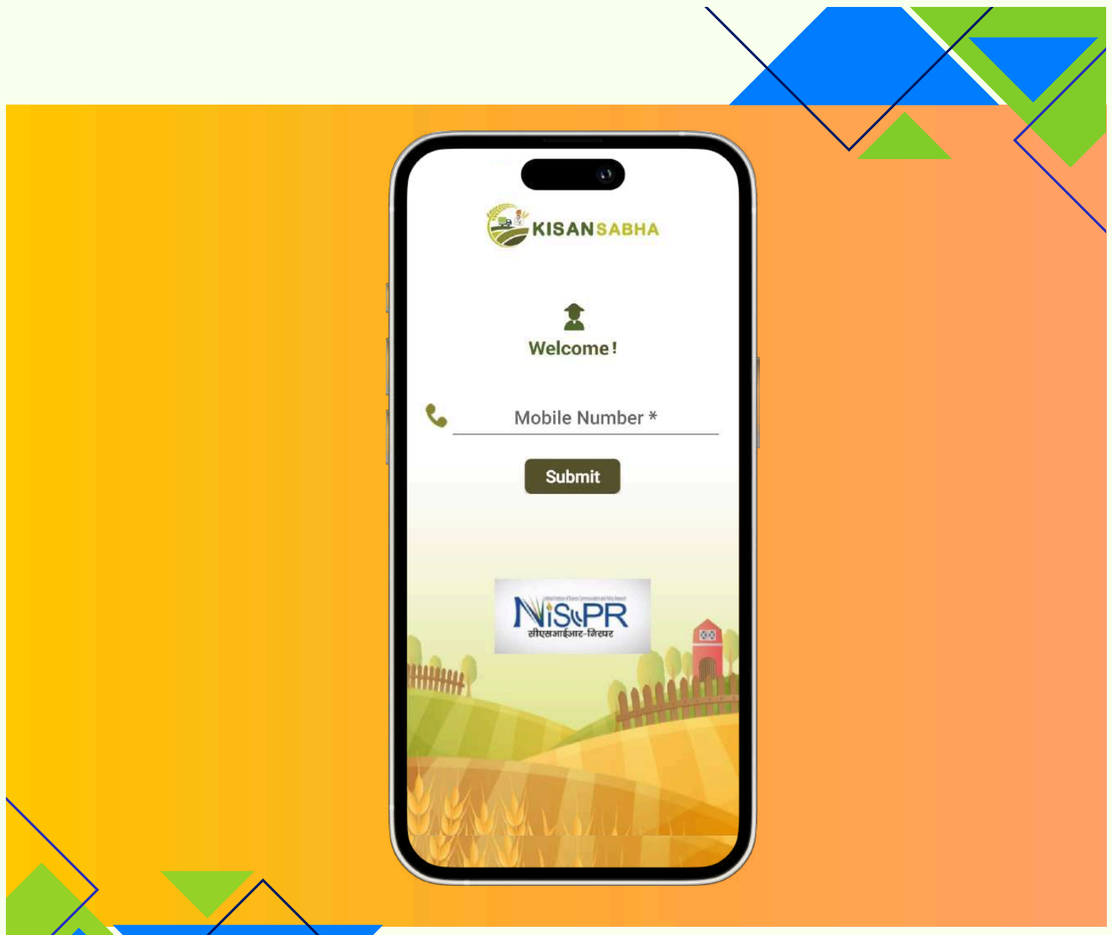
Sector: **Farm**
Category : **Digital, Design & Mobility Innovations**

Council of Scientific & Industrial Research (CSIR)

Development of Mobile Application for Supply Chain and Freight Transportation Management for Farmers

Overview

Kisan Sabha App empowers Indian farmers by connecting them with nearby mandis for fair and efficient selling of produce. Designed to balance demand–supply of agricultural goods, it currently serves 11 lakh farmers including about a quarter women, 1,200 mandi dealers, 30,000 transporters, and 2,500 FPOs, with training and review support provided.



Functionalities

- Connects farmers directly with local mandis
- Balances agricultural demand and supply efficiently
- Facilitates farmer registration and digital training
- Supports FPOs, dealers, and transport networks

Key Features

Empowering – Benefits over 11 lakh farmers

Inclusive – 25% women farmer participation

Collaborative – Industrial partnerships for training and review

Implementation Overview

Yes	8	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-NIScPR, Pusa Campus, K S Krishnan Marg, New Delhi, K S Krishnan Marg, New Delhi, 110012

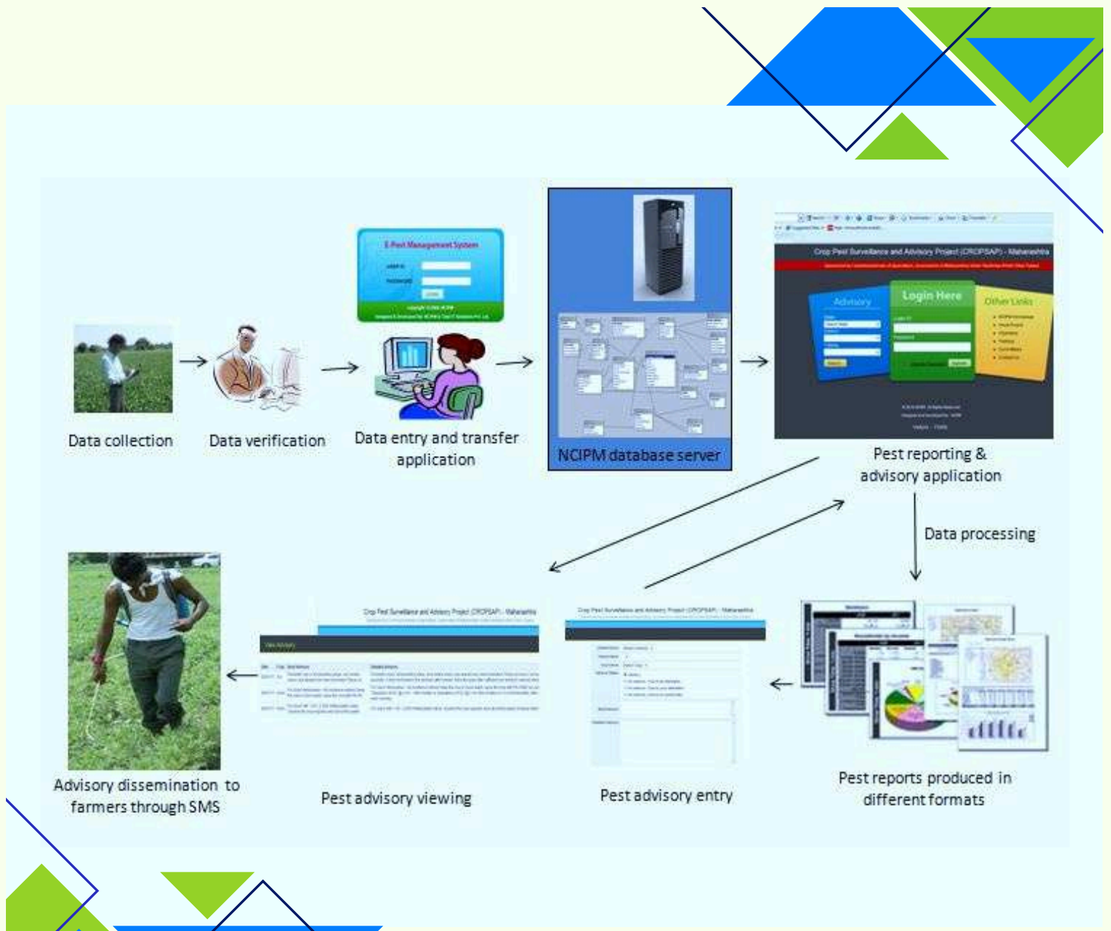
Sector: **Farm**
Category : **Digital, Design & Mobility Innovations**

Indian Council of Agricultural Research (ICAR)

E-pest Surveillance and Advisory System

Overview

The e-Pest Surveillance System uses web technology for pest management, enabling rapid hotspot identification and timely intervention. Awareness campaigns and SMS-based advisories guide farmers in adopting appropriate strategies. Successfully deployed in Maharashtra and Haryana, it supports sustainable plant protection through integrated pest management.



Functionalities

- Promotes quick identification of pest hotspots
- Ensures timely intervention by field staff
- Supports farmer awareness through advisories and campaigns
- Enhances adoption of integrated pest management practices

Key Features

Innovative – Web-based pest surveillance system

Effective – Facilitates timely pest management over extensive areas

Supported – Includes training, deployment, and service guidance

Implementation Overview

1000
Deployed

9
Technology Readiness Level (TRL)

10
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-National Research Centre for Integrated Pest Management, New Delhi, 110068

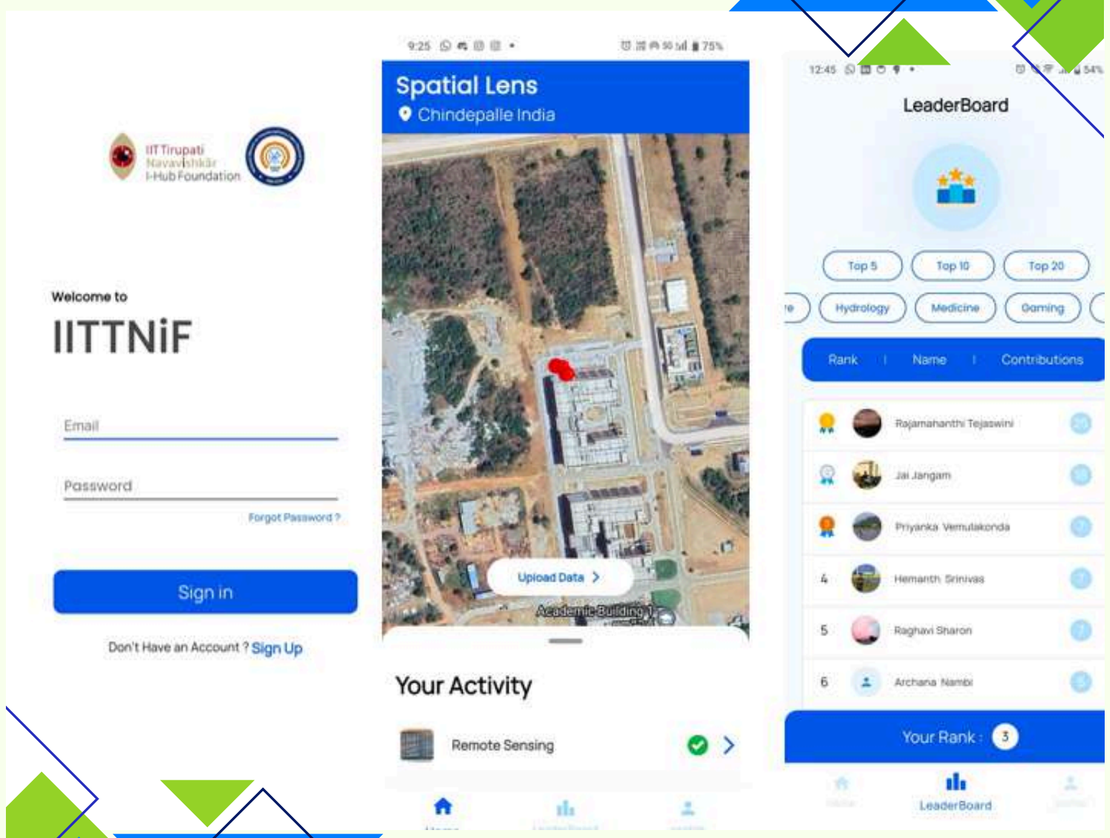
Sector: **Farm**
Category : **Digital, Design & Mobility Innovations**

Ministry of Labour and Employment

SpatialLens: GIS-Driven Platform for Empowering Underserved Entrepreneurs

Overview

SpatialLens is a GIS-based digital platform designed to support businesses run by underprivileged communities and create livelihood opportunities for unemployed youth. By mapping local demand–supply gaps and providing actionable spatial insights, it enables better decision-making, enterprise expansion, and service delivery. Comprehensive technical, marketing, data security, and financial support strengthen adoption and scalability.



Functionalities

- Promotes business growth among underprivileged individuals
- Enhances employment opportunities for youth across sectors
- Supports data-driven decision making using GIS insights
- Facilitates market access, user acquisition, and financial support

Key Features

Data-Driven – Uses GIS data for strategic planning and opportunity mapping

Inclusive – Empowers underprivileged and unemployed youth

Supportive – Provides technical, marketing, and financial assistance

Implementation Overview

No	6	30
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

IIT Tirupati Navavishkar I-Hub Foundation, 2nd floor, CIF building, IIT Tirupati Campus, Chittoor, Andhra Pradesh, 517619

Sector: **Farm**

Category : **Digital, Design & Mobility Innovations**

Office of the PSA to the Government of India

Crossfyre: Open-Source Collaborative Manufacturing Platform

Overview

Crossfyre is an IT platform that fosters open-source technology design and development, attracting manufacturers for partnerships and product information. By connecting innovators with small-scale manufacturers, it reduces production costs, shortens lead times, and creates local employment. Aligned with *Make in India*, it enhances customization, flexibility, and decentralized manufacturing. RuTAG provides ongoing service and maintenance.



Functionalities

- Enables collaboration among manufacturers on component production
- Empowers small-scale enterprises by creating job opportunities
- Reduces production lead times and overall manufacturing costs
- Promotes flexibility and customization in technology design

Key Features

Open-Source Collaboration – Encourages joint innovation and shared design development

Cost Efficiency – Reduces transportation needs and streamlines workflows

User-Friendly Platform – Advanced interface simplifying fabrication processes

Implementation Overview

Yes	9	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Rural Technology Action Group, 2nd Floor, ICSR Building, IIT Madras, Chennai, Tamil Nadu, 600036

Sector: **Farm**
Category : **Digital, Design & Mobility Innovations**

Office of the PSA to the Government of India

Krishi Mandi Data Driven AI Optimised Agri-Supply Chain Platform

Overview

The Krishi Mandi App is an AI-driven e-commerce platform that eliminates middlemen, improves price discovery, and boosts farmers' incomes by 20–30%. By optimising logistics, predicting yield and quality, and directly linking farmers with consumers, it reduces spoilage by 33%., supports smallholders, encourages organic practices, and strengthens sustainable, technology-enabled agriculture.



Functionalities

- Promotes direct farmer-to-consumer sales
- Enhances productivity using AI-based crop yield and quality predictions
- Reduces logistical costs and ensures affordable transportation for small farmers
- Supports organic farming adoption and sustainable practices

Key Features

Income – AI- optimised platform improves income by 20–30%

Market Linkage – Eliminates middlemen and reduces farmer reliance on intermediaries

Supported – Technical support and training provided for effective adoption

Implementation Overview

Yes	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Kanpur,
NL-1-115-L, Manufacturing Science Laboratory,
Northern Laboratories ,
Kanpur, Uttar Pradesh,
208016

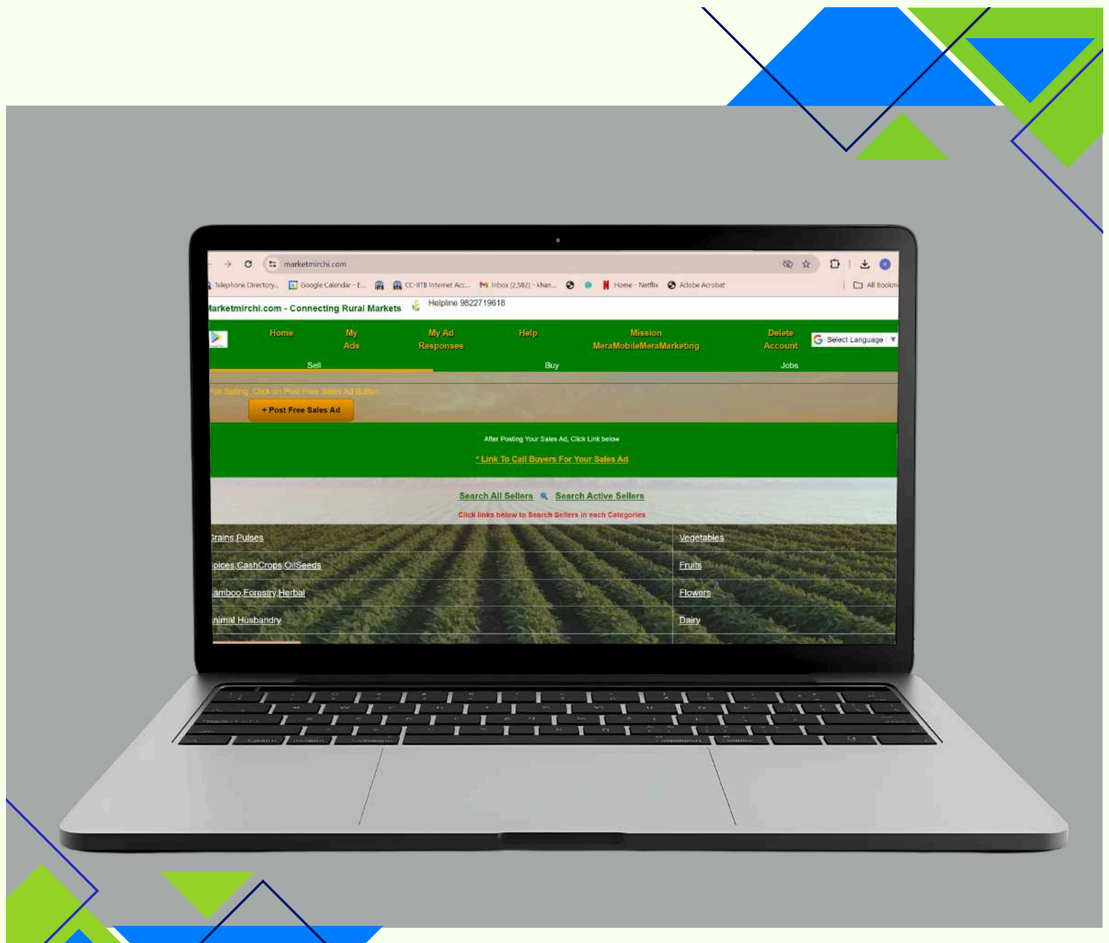
Sector: **Farm**
Category : **Digital, Design & Mobility Innovations**

Office of the PSA to the Government of India

Market Mirchi – Free Online Marketplace for Rural Producers

Overview

Market Mirchi is an online portal and mobile app created to provide a free marketplace for rural producers. Sellers can upload product details, while buyers can express interest without subscription fees. It promotes agricultural and rural products by connecting sellers and buyers directly. The platform is user-friendly, mobile-enabled, and includes ongoing technical support.



Functionalities

- Enables rural producers to showcase and sell products online
- Provides buyers with a direct channel to express interest in commodities
- Promotes agricultural and rural products through digital access
- Reduces marketing costs by offering a free, open platform

Key Features

Accessible – Sellers can upload product information via mobile phones

Inclusive – Buyers and sellers connect without subscription fees

Supported – Technical support provided for smooth platform use

Implementation Overview

83	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Bombay,
CTARA, Mumbai,
Maharashtra,
400076

Sector: **Farm**
Category : **Digital, Design & Mobility Innovations**

Office of the PSA to the Government of India

Modified bicycle as a rural vending cart

Overview

The Modified Bicycle with Bamboo Attachments, developed by RuTAG IIT Guwahati, offers a cost-effective transport solution for rural vendors and tribal women. With a redesigned frame and bamboo baskets, it enables safe and efficient goods carriage on poor rural roads. Technical, maintenance, and handholding support are provided.



Functionalities

- Enhances mobility for rural vendors
- Reduces transportation costs
- Promotes the use of locally available materials
- Supports users with technical guidance and training

Key Features

Innovative – Redesigned frame with durable bamboo attachments

Sustainable – Utilises eco-friendly, locally available bamboo for baskets

Supported – Technical, maintenance, and handholding support provided

Implementation Overview

20	6	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIt Guwahati,
Technology Complex,
Guwahati, Assam,
781039

INTEGRATED CROP & POST-HARVEST SYSTEMS

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Low Glycemic Index Rice: Improved Samba Mahsuri

Overview

Improved Samba Mahsuri (ISM) is a high-yielding, fine-grain rice variety developed by introgressing three bacterial blight resistance genes (Xa21, xa13, xa5). It is clinically validated to have a low glycaemic index (GI < 55) and is widely cultivated. Seed samples and paid purity testing services are available for adoption.



Functionalities

- Offers resistance to bacterial blight diseases
- Supports cultivation of low-GI rice
- Enables seed distribution and varietal trials
- Facilitates seed purity testing services

Key Features

Resistant - Bacterial blight gene introgression

Nutritive - Clinically tested low GI

Scalable - Widely cultivated across India

Implementation Overview

Yes	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Centre for Cellular and Molecular Biology, Uppal Road, Hyderabad, Telangana, 500007

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Agro-technology for Jammu Monarda (IIIM-J MC02) – Essential Oil Crop

Overview

Jammu Monarda (Lemon Beebalm) – Var. IIIM(J)MC-02, developed by CSIR–IIIM in 1999, is an annual aromatic plant cultivated for its high-thymol essential oil (55–75%). It grows well in well-drained sandy loam soil and matures within six months. Institutional distillation support is available for oil extraction and processing.



Functionalities

- Produces thymol-rich essential oil yield
- Grows in pH-tolerant loamy soils
- Matures within a six-month cycle
- Supports pharmaceutical and fragrance industries

Key Features

55–75%

Aromatic - Thymol content

Adaptable - Soil pH 6.5–8

Supports - Pharmaceutical and fragrance industries

Implementation Overview

10	7	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Indian Institute of Integrative Medicine, Canal road, Jammu, Jammu and Kashmir, 180001

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Enhanced Agro-technology for Lemongrass (CKP-25) – Essential Oil Yield

Overview

CKP-25 and Kalam are interspecific hybrid strains of *Cymbopogon khasianus* and *Cymbopogon pendulus*, developed by CSIR–IIIM. These varieties yield higher essential oil content than conventional strains, with 0.45–1.00% oil recovery and 82–85% Citral. Farmers are supported by the institute with distillation services for oil extraction.



Functionalities

- Produces high citral essential oil
- Outperforms existing varieties in yield
- Adaptable to seasonal cultivation conditions
- Distillation services supported by institute

Key Features

High-Yielding - Oil content up to 1%

Citral-Rich - 82–85% citral concentration

Farmer-Supported - Distillation guidance and assistance

Implementation Overview

10	7	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Indian Institute of Integrative Medicine Jammu, Canal road , Jammu, Jammu and Kashmir, 180001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Electrostatic Pesticide Sprayer

Overview

An indigenously developed low-cost electrostatic spraying system addresses the needs of small-scale farms in Indian agriculture. Designed for crops, orchards, and trees, it ensures uniform pesticide deposition, reduces chemical usage, and minimizes health risks. Lightweight, efficient, and eco-friendly, it is globally competitive and aligns with international performance standards.



Functionalities

- Enables uniform crop surface pesticide coverage
- Reduces pesticide consumption and application cost
- Minimizes human exposure to harmful chemicals
- Offers portable, lightweight spraying solution

Key Features

Eco-Friendly- Reduces chemical and health hazards

Efficient- High spray uniformity, low wastage

Indigenous- State-of-art, locally developed technology

Implementation Overview

No	8	10
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Scientific Instruments Organisation(CSIO), Sector 30, Chandigarh

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Mechanized Sisal Fibre Extraction Technology

Overview

Sisal is a low maintenance, drought-tolerant plant grown across diverse agro-climatic zones. CSIR–AMPRI has developed a mechanized sisal fibre extraction process suited for small- and medium-scale operations, replacing the slow traditional method. This technology supports rural employment, income generation, and livelihood development, with technical and promotional support available for adoption. technology by CSIR-AMPRI, it supports rural employment, income generation, and value addition at small and medium scales.



Functionalities

- Mechanizes traditional sisal fibre extraction process
- Enables small and medium-scale operations
- Generates rural employment and income opportunities
- Offers technical and promotional adoption support

Key Features

Low-Maintenance - Grows with minimal water needs

Efficient - Faster than traditional extraction methods

Versatile - Adaptable to varied agro-climatic zones

Implementation Overview

No	6	15
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Advanced Materials and Processes Research Institute, CSIR-Ampri, Bhopal, Madhya Pradesh, 462026

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Improved Fodder Quality through Crop Residue Delignification

Overview

Crop residues such as straw and stover are affordable ruminant fodder but have low protein (3–5%) and high lignin (15–18%), limiting digestibility and intake. This technology delignifies residues, enhancing nutrient availability, digestibility, and overall animal productivity, particularly during critical growth phases in dairy and meat production systems.



Functionalities

- Reduces lignin content in crop residues
- Enhances digestibility and nutrient availability
- Improves feed intake and animal performance
- Supports technology transfer for wider adoption

Key Features

Nutritive – Increases crude protein utilization

Productive – Boosts growth and milk yields

Transferable – Ready for commercialization

Implementation Overview

No	6	4
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

Contact Details

SCAN HERE FOR MORE

Indian Institute of Chemical Technology, CSIR-IICT, Uppal Road, Hyderabad, Telangana, 500007

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Improved Agro-technology for Turmeric – High-Curcumin Production

Overview

CIM-Pitamber, a high-yield turmeric (*Curcuma longa*) clone developed through clonal breeding by CSIR–CIMAP, produces 60–65 tonnes of rhizomes per hectare with 12.5% curcuminoids in 180–190 days. Cultivated through rhizomes, it is rich in curcumin and exhibits anti-inflammatory, antioxidant, antimicrobial, and wound-healing properties for medicinal and culinary applications.



Functionalities

- Supports open and shade-based cultivation
- Ensures high-yield turmeric rhizome production
- Provides marketing and value-addition assistance
- Enables large-scale field and shed operations

Key Features

Versatile - Grows in varied conditions

High-Yielding - 50–65 tonnes per hectare

Supported - Market and processing assistance

Implementation Overview

4	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Institute of Medicinal and Aromatic Plants, CSIR-Cimap, near Kukrail Picnic Spot Road, Lucknow, Uttar Pradesh, 226015

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Pheromone-Based Pest Management Technology

Overview

CSIR–IICT Hyderabad's Pheromone Application Technology (PAT) is an eco-friendly Integrated Pest Management tool that minimizes indiscriminate pesticide use, reducing environmental and health risks. Covering isolation to field evaluation, PAT targets major pests in cotton, paddy, maize, groundnut, sugarcane, fruits, and vegetables, with two-season handholding support for adopters.



Functionalities

- Provides eco-friendly pest management solution
- Reduces pesticide use and health risks
- Targets pests across major crop systems
- Offers two-season implementation handholding

Key Features

Sustainable - Minimizes pesticide dependency

Comprehensive - Isolation to field deployment

Targeted - Controls multiple crop pests

Implementation Overview

No	7	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Indian Institute of Chemical Technology, CSIR-Indian Institute of Chemical Technology, Hyderabad, Telangana, 500007

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Improved agro-technology of Ashwagandha (*Withania somnifera*)

Overview

A high-yield Ashwagandha (*Withania somnifera*) variety developed by CSIR–CIMAP through intraspecific hybridization, combines superior root quality and biomass yield. Maturing in 168–178 days, it produces 9–10 quintals of roots per hectare. Rich in withanolide-A and -B, it is tolerant to leaf blight and suited to multiple Indian agro-climatic zones.



Functionalities

- Cultivated in semi-tropical regions during the late rainy season
- Requires 10–15 kg/ha seed for broadcasting method
- Produces fleshy roots with commercial-quality size
- Enables profitable cultivation with low investment

Key Features

High Yield - Produces 8–10 quintals of dry root per hectare

Profitable - Net returns up to ₹66,000/ha with moderate input costs

Supported - Includes marketing and value addition assistance

Implementation Overview

Yes	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Institute of Medicinal and Aromatic Plants, Csir-Cimap, near Kukrail Picnic Spot Road, Lucknow, Uttar Pradesh, 226015

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Improved agro-technology of Vetiver (*Chrysopogon zizanoides*)

Overview

Vetiver (Khus) is cultivated for high-value essential oil used in perfumes, soaps, and cosmetics. CSIR-CIMAP has developed high-yielding varieties and improved processing technologies. Cultivation offers additional income through intercropping with wheat or menthol mint. Post-harvest support, including distillation, marketing, and value addition, enhances profitability, with net returns of ₹1,05,000–1,25,000/ha.



Functionalities

- Supports cultivation in varied climatic zones
- Produces aromatic, high-value vetiver oil
- Enables intercropping for diversified farm income
- Generates profitable returns with low input

Key Features

Profitable - Net returns ₹1.05–1.25 lakh/ha

Versatile - Suitable for intercropping systems

Valuable - Oil market price ₹12–15k/kg

Implementation Overview

Yes	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Institute of Medicinal and Aromatic Plants, CSIR-Cimap, near Kukrail Picnic Spot Road, Lucknow, Uttar Pradesh, 226015

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Improved agro-technology of Basil.

Overview

Indian basil (*Ocimum basilicum*) is a short-duration crop cultivated for essential oil used in flavoring, fragrances, pharmaceuticals, and aromatherapy. Thriving in tropical and subtropical climates, CSIR-CIMAP has developed high-yielding varieties with enhanced chemical profiles, producing 200–250 q/ha herb and 100–125 kg oil/ha, with net returns of ₹40,000–45,000/ha in three months.



Functionalities

- Produces aromatic oil for diverse industries
- Thrives in tropical and sub-tropical climates
- Ensures high-yield herb and oil production
- Provides post-harvest and market linkage support

Key Features

Profitable - Net return ₹40–45k/ha

Versatile - Multiple industrial applications

Supported - Distillation and value-addition assistance

Implementation Overview

Yes	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Institute of Medicinal and Aromatic Plants, CSIR-Cimap, near Kukrail Picnic Spot Road, Lucknow, Uttar Pradesh, 226015

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Improved agro-technology of Palmarosa (*Cymbopogan martinii*)

Overview

Palmarosa (*Cymbopogon martinii*) is a perennial aromatic grass cultivated for essential oil from leaves, flowering tops, and above-ground parts, used in perfumery, cosmetics, and flavor industries. CSIR-CIMAP has developed high-yielding varieties and quality seeds, yielding 100-125 kg oil/ha under irrigated conditions, with high returns.



Functionalities

- Produces essential oil from grass biomass with a high annual oil yield/ha
- Enables multiple harvests under irrigated conditions
- Generates net income of ₹1,20,000 per hectare per year
- Provides post-harvest and market linkage support

Key Features

Profitable Yield - 125-150 kg essential oil per hectare annually

Efficient - Low seed requirement with high germination rate

Supported - Comprehensive post-harvest and marketing assistance

Implementation Overview

Yes	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Institute of Medicinal and Aromatic Plants, CSIR-Cimap, near Kukrail Picnic Spot Road, Lucknow, Uttar Pradesh, 226015

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Improved agro-technology of lemongrass

Overview

Lemongrass (*Cymbopogon flexuosus*) is a perennial aromatic grass cultivated for oil used in perfumery, soaps, cosmetics, and as a citral source for food and pharmaceuticals. Planted using 37,000–40,000 slips/ha at 60 × 45 cm spacing, the first harvest occurs six months after planting. CSIR-CIMAP has developed high-yielding varieties yielding 200–280 kg oil/ha under irrigated conditions, with net returns up to ₹1,20,000/ha, and post-harvest support.



Functionalities

- Produces essential oil extracted from leaves
- Provides raw material for flavor, fragrance, and medicinal industries.
- Grows best in warm, humid, sub-tropical climates
- 6 — Allows the first harvest six months after planting

Key Features

Yield - 200-250 kg essential oil per hectare annually

Efficient - High-density slip planting for better productivity

Supported - Post-harvest and marketing assistance available

Implementation Overview

8	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Institute of Medicinal and Aromatic Plants, CSIR-Cimap, near Kukrail Picnic Spot Road, Lucknow, Uttar Pradesh, 226015

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Lotus (Namoh-108) Fermented Health Drink Technology

Overview

The Lotus (Namoh-108) Fermented Health Drink is made from nutrient-rich lotus rhizomes and contains amino acids, polyphenols, and minerals. With an adjustable alcohol content (4–8%), it offers a refreshing, indigenous alternative to other fermented beverages. Comprehensive industry support is provided, from production training to marketing strategies and equipment guidance.



Functionalities

- Produces fermented drink from lotus rhizomes
- Offers adjustable alcohol content (4–8%)
- Provides training for production and marketing
- Supplies complete technology transfer support

Key Features

Nutrient-rich – High in amino acids and polyphenols

Safe – Controlled alcohol content and human consumption is safe

Support – Comprehensive industry training and marketing aid

Implementation Overview

No	7	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-National Botanical Research Institute,
CSIR-NBRI, Lucknow,
Uttar Pradesh, 226001

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Lotus Petals Based Antioxidant Green Tea Technology

Overview

The Lotus–Nymphea - Green Tea Beverage, developed under the CSIR-Floriculture Mission, blends Lotus Namoh-108, Nymphea petals, and green tea leaves. Rich in antioxidants and minerals, it offers a soothing taste and strong domestic and export market potential. Full industry support is provided, from production training to marketing strategies and equipment guidance.



Functionalities

- Produces antioxidant-rich botanical tea blend
- Combines lotus, nymphea, and green tea
- Offers end-to-end production training support
- Targets domestic and international health markets

Key Features

Nutritive - High antioxidants and minerals

Unique - Distinctive flavor profile

Supported - Full technology transfer assistance

Implementation Overview

No	7	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-National Botanical Research Institute,
CSIR-NBRI, Lucknow,
Uttar Pradesh, 226001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Agro-technologies for Lotus Cultivation (Namoh 108)

Overview

Lotus ‘Namoh-108’, developed by CSIR-NBRI, Lucknow, is an elite light-pink variety producing large 10-inch flowers nearly year-round (March–December). Rich in essential amino acids, polyphenols, flavonoids, catechins, fatty acids, carbohydrates, and minerals, it offers high nutritional value. Full technical, production, and marketing support is available for adoption and commercialization.



Functionalities

- Produces nutritionally rich lotus flowers
- Flowers for extended annual blooming period
- Supports farmer and entrepreneur income generation
- Provides end-to-end commercialization assistance

Key Features

Nutrient-Dense - High bioactive compound content

Extended-Blooming - Flowers March to December

Supported - Full technical and market guidance

Implementation Overview

Yes	7	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-National Botanical Research Institute,
CSIR-NBRI, Lucknow,
Uttar Pradesh, 226001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Bioinoculant Technology for Yield Enhancement

Overview

CSIR-NBRI's Bioinoculant Technology enhances crop yield by 10–30% and farmer income by 15–30%, while reducing chemical fertilizer use by up to 40–50%. By strengthening plant–microbe interactions under environmental stress, it improves economic crop productivity. Full technical, production, and marketing support is available for commercial adoption.



Functionalities

- Enhances crop yield through microbial interactions
- Reduces chemical fertilizer requirements significantly
- Improves farmer income via higher productivity
- Provides complete commercialization and training support

Key Features

Efficient - Cuts fertilizer use by 40–50%

Profitable - Boosts income by 15–30%

Supported - End-to-end adoption guidance

Implementation Overview

Yes	7	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-National Botanical Research Institute, CSIR-National Botanical Research Institute,, Lucknow, Uttar Pradesh, 226001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

CROMA-03: High-Bioavailability Curcumin Nutraceutical

Overview

CROMA-03 is a mono-herbal nutraceutical from *Curcuma longa*, rich in anti-inflammatory polyphenols and polysaccharides. Gluten-free, non-toxic, and highly bioavailable, it combats chronic inflammation and oxidative stress. The standardized extract enables development of nutraceuticals and functional foods. Full technical, production, and marketing support is available for commercialization.



Functionalities

- Reduces chronic inflammation naturally and safely
- Mitigates oxidative stress with bioactive compounds
- Enables functional food and nutraceutical development
- Provides complete technology transfer and training

Key Features

Natural – Made from standardised, non-toxic herbal extracts

Effective – High bioavailability of curcumin with no toxicity

Supported – End-to-end commercialization assistance

Implementation Overview

Yes	7	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-National Botanical Research Institute, Lucknow, Uttar Pradesh, 226001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Improved Agro-technology for Mint Cultivation

Overview

Menthol mint (*Mentha arvensis*) is an annual aromatic crop grown for essential oil used in pharmaceuticals, flavoring, and perfumery. India leads global production and export of natural menthol. CSIR-CIMAP has developed high-yielding varieties. Propagated via suckers, the crop yields 200 kg/ha from two harvests, generating net returns of around ₹1,00,000/ha. Post-harvest support includes improved distillation units, marketing assistance, and value-addition options to enhance profitability.



Functionalities

- Produces high-quality menthol-rich essential oil
- Offers two harvests for higher yield
- Provides income generation for rural farmers
- Enables value addition through post-harvest support

Key Features

High yield – Up to 200 kg oil/ha from two harvests

Profitable – Net return of ₹1,00,000/ha

Supported – Post-harvest assistance for distillation, marketing, and value addition

Implementation Overview

6	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Institute Of Medicinal and Aromatic Plants, CSIR- CIMAP near Kukrail Picnic Spot Road, Lucknow, Uttar Pradesh, 226015

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Electric Tiller for Sustainable Farm Mechanization

Overview

The indigenously developed electric tiller is a 100% pure electric, compact power weeder designed for small and marginal farmers. Suitable for diverse terrains, it supports multiple agricultural implements, reduces operational costs, and offers a clean, low-noise, women-friendly alternative to conventional tillers. One-year training and on-site support are provided post-licensing.



Functionalities

- Provides eco-friendly, zero-emission farm operations
- Supports multiple agricultural applications with compatible implements
- Ensures accessible, low-noise operation in remote or hilly areas
- Offers a women-friendly design for safe and easy handling

Key Features

Sustainable – 100% electric, no air pollution, low noise and vibration

Versatile – Compact, multi-utility design for small and marginal farmers

Cost-Effective – Lower operating costs than ICE tillers

Implementation Overview

No	6	30
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Mechanical Engineering Research Institute Durgapur, M. G. Avenue, Durgapur-713209, WB, CSIR-CMERI Durgapur, Durgapur, West Bengal, 713209

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Electric Tractor Technology for Smallholder Farming

Overview

The CSIR PRIMA ET11, developed by CSIR-CMERI, is an indigenous compact electric tractor tailored for small and marginal farmers. Featuring an optimized drivetrain, efficient hydraulics, women-friendly ergonomics, and vehicle health monitoring, it offers a cost-effective, eco-friendly alternative. One-year training, on-site support, and handholding are provided post-licensing.



Functionalities

- Performs versatile farm operations electrically
- Offers optimized drivetrain for smooth gear transition
- Supports real-time vehicle health monitoring
- Supports farm and auxiliary power needs through V2L feature

Key Features

Sustainable – Zero-emission, indigenous electric tractor

Innovative – Advanced hydraulics, health monitoring, and V2L capability

Ergonomic – Women-friendly design for ease of use

Implementation Overview

No	6	30
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Mechanical Engineering Research Institute, M.G.Avenue, Durgapur-713209, WB, CSIR-CMERI Durgapur, Durgapur, West Bengal, 713209

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Potassium-Rich Biochar Technology for Soil Health

Overview

An indigenous pyrolysis technology converts banana peduncle and waste into potassium-enriched biochar (5–15% K), primarily in water-soluble form. Porous and alkaline, it improves acidic soils, aids liming, water retention, and carbon sequestration, and supplements plant potassium needs. Applicable in agriculture, horticulture, forestry, and gardening, with ongoing post-commercialization technical support.



Functionalities

- Converts agri-waste into nutrient-rich biochar
- Enhances soil health through liming and nutrient supply
- Improves water retention and soil alkalinity
- Supports carbon sequestration and climate resilience

Key Features

Nutrient-rich – Contains 5–15% water-soluble potassium

Versatile – Suitable for multiple land uses

Supported – Post-commercialisation testing and scientific guidance provided

Implementation Overview

Yes	8	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Institute of Minerals and Materials Technology, Room No. 307, Environment & Sustainability Department, CSIR-IMMT, Bhubaneswar, Orissa, 751013

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Improved Shiitake Farming for High-Value Functional Food Markets

Overview

CSIR-IHBT's Shiitake Mushroom Cultivation Technology enables rapid, profitable production using a sawdust-based substrate that shortens the crop cycle from 8–10 months to just 2 months. Rich in Vitamin D, beta-glucans, and eritadenine, Shiitake offers high nutritional and therapeutic value while supporting farmer income, nutraceutical applications, and scalable entrepreneurship.



Functionalities

- Reduces blood cholesterol levels
- Supports immune system function
- Lowers inflammation and improves gut health
- Incorporates market-driven modifications for product optimisation

Key Features

Nutrient-rich – Rich in bioactive compounds

Health-focused – Promotes cholesterol reduction and immune health

Adaptive – Technology refined per market needs

Implementation Overview

Yes	8	6
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-IHBT Palampur, Coordinator Business Development & Marketing Unit, CSIR-IHBT, Palampur
Post Box. No. 06, Himachal Pradesh, 176061

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Ready to Cook Dehydrated Vegetables / Vegetable Mixes

Overview

This vegetable preservation technology extends shelf life by dehydrating surplus vegetables during peak harvests to create ready-to-cook mixes. Easily rehydrated in 2–3 minutes, these products reduce post-harvest losses, stabilize prices, and ensure year-round availability of quality vegetables. Technical consultancy support is provided for deployment and commercialization.



Functionalities

- Preserves surplus vegetables through dehydration
- Provides ready-to-cook, quick rehydration products
- Reduces post-harvest losses and price fluctuations
- Ensures consistent year-round vegetable availability

Key Features

Convenient – Ready to cook in 2–3 minutes

Efficient – Minimizes post-harvest waste and price instability

Supported- Includes technical consultancy for deployment

Implementation Overview

No	6	10
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Institute for Interdisciplinary Science and Technology, Head, Business Development Division, Thiruvananthapuram, Kerala, 695019

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Dehydration of Fruits and Fruit Preservation in Honey

Overview

This fruit preservation technique maintains ripe fruit quality using osmotic dehydration in honey, followed by gentle drying to achieve optimal water activity. The additive-free product retains natural flavors and remains shelf-stable for up to one year when vacuum-packed. Technical consultancy support is available for deployment and commercialization.



Functionalities

- Preserves ripe fruits using honey dehydration
- Retains natural taste without added preservatives
- Extends fruit shelf life up to one year
- Provides consultancy for technology deployment

Key Features

Natural – Additive and preservative-free process

Flavorful – Maintains original fruit taste

Durable – One-year shelf stability at room temperature

Implementation Overview

No	8	10
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Institute for Interdisciplinary Science and Technology, Head, Business Development Division, Thiruvananthapuram, Kerala, 695019

Sector: **Farm**

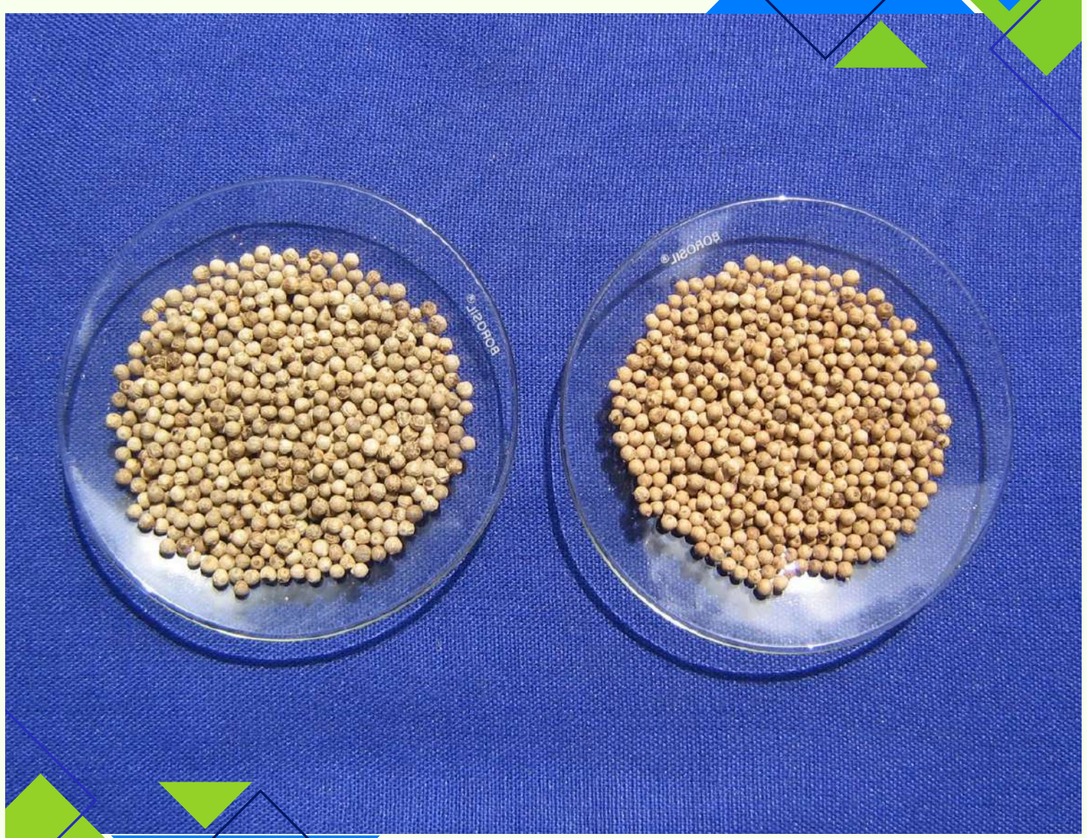
Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Clean Bioprocess for White Pepper Production

Overview

CSIR-NIIST has developed a microbial enzymatic process to produce high-quality white pepper from black or green pepper. Using controlled anaerobic digestion in a specially designed reactor, this sustainable technology enables efficient bulk production while enhancing product quality and reducing environmental impact. Technical consultancy is available for deployment and commercialization.



Functionalities

- Converts black or green pepper efficiently
- Uses microbial enzymatic anaerobic digestion
- Produces high-quality white pepper sustainably
- Enables bulk-scale eco-friendly spice processing

Key Features

High-Quality – Produces superior-grade white pepper

Sustainable – Uses natural microbial consortium for processing

Efficient – Scalable bulk production method

Implementation Overview

30	9	10
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Institute for Interdisciplinary Science and Technology, Head, Business Development Division, Thiruvananthapuram, Kerala, 695019

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Process for preparation of liquid seaweed plant bio-stimulant (LSPB) from brown algae-sargassum

Overview

This is an indigenously developed seaweed-based biofertilizer technology converts fresh or dry brown seaweed biomass into a low-cost liquid fertilizer suitable for foliar and soil application. The process enhances crop yield by 13–28% and repurposes residues into cellulose and carbon materials, supporting import substitution and sustainable agricultural growth in India.



Functionalities

- Enhances crop yields and quality affordably
- Produces biofertilizer accessible to marginal farmers
- Utilizes residues for value-added products
- Provides demonstrations and post-licensing technical support

Key Features

Affordable – Low-cost technology for small scale farmers

Productive – Yield gains of 13–28%

Supported – Demonstration and six-month handholding

Implementation Overview

Yes	9	20
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR CSMCRI Bhavnagar,
Central Salt & Marine Chemicals Research Institute
G B Marg Waghawadi Raod,
Bhavnagar, Gujarat, 364001

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Council of Scientific & Industrial Research (CSIR)

Preparation of low sodium salt of botanic origin – Saloni – with backward integration of cultivation of *Salicornia brachiata*

Overview

A process for producing low-sodium, nutrient-rich salt (Saloni) from the salt-tolerant plant *Salicornia brachiata* provides a healthy alternative for vegetarians and individuals requiring reduced sodium intake. Cultivation on saline lands yields ~41 t fresh biomass, 11 t dry biomass, and 3.8 t ash/ha, supporting coastal farmer livelihoods while promoting sustainable resource use. Technical consultancy for deployment is available.



Functionalities

- Enables cultivation of Salicornia on saline lands
- Generates large biomass for salt extraction
- Reduces greenhouse gas emissions sustainably
- Provides livelihood for coastal farmers and fishermen communities

Key Features

Health-oriented – Suitable for low-sodium diets, including hypertension management

High-yield – Produces ~1.9 ton salt/hectare from saline land

Sustainable – Supports coastal livelihoods and reduces GHG emissions

Implementation Overview

No	9	10
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR CSMCRI Bhavnagar,
Central Salt & Marine Chemicals Research Institute
G B Marg Waghawadi Raod,
Bhavnagar, Gujarat, 364001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Biotechnology (DBT)

Pan-genome SNP Genotyping Arrays for Accelerated Crop Improvement of Rice and Chickpea

Overview

The National Institute of Plant Genome Research has developed the first-ever 90K Pan-genome SNP Genotyping Arrays, IndRA for rice and IndiCA for Chickpea. These arrays capture novel trait-associated genomic variations, enhancing genotyping and genomics-assisted breeding. Technical support is provided for adoption, data analysis, and integration into crop improvement programs.



Functionalities

- Detects novel genomic variations in rice, cereals, pulses and chickpea
- Genotypes diverse Indian cultivars and pan-genome variations
- Facilitates trait discovery for stress tolerance and high yield
- Enables genomics-assisted breeding and crop improvement

Key Features

Innovative – First-ever 90K Pan-genome SNP arrays for rice and chickpea

Comprehensive – Covers reference and cultivar-specific genomic variations.

Supported – Technical guidance provided for adoption and breeding applications

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Institute of Plant Genome Research, Aruna Asaf Ali Marg, Delhi, 110067

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Biotechnology (DBT)

ADVIKA: A New Superior Climate Smart Drought Tolerant High-Yielding Chickpea Variety

Overview

The National Institute of Plant Genome Research has developed ADVIKA, an improved desi chickpea variety with enhanced drought tolerance and 11% higher yield under stress. Derived using molecular breeding of superior ABCC3 alleles, ADVIKA ensures productivity, food security, and climate resilience. Technical support is provided for cultivation, seed multiplication, and adoption.



Functionalities

- Enhances drought tolerance through ROS detoxification and ABA-mediated stomatal regulation
- Improves yield and productivity under water-limited conditions
- Uses JG 16 as the recipient variety for introgression of superior alleles
- Facilitates introgression of superior alleles into popular chickpea varieties

Key Features

Improved – Enhanced drought tolerance and 11% higher yield in ADVIKA

Notified – Approved for central zone cultivation and commercial use by CVRC

Supported – Technical guidance provided for cultivation and variety adoption

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Institute of Plant Genome Research, Aruna Asaf Ali Marg, Delhi, 110067

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Biotechnology (DBT)

SAATVIK: A New Superior Climate Smart Drought Tolerant High-Yielding Chickpea Variety

Overview

SAATVIK is an improved desi chickpea variety developed by introgressing a superior drought-tolerance allele of a basic helix-loop-helix gene from a landrace into the popular JAKI 9218 variety. It delivers 15% higher yield under drought stress by modulating ABA signalling and enhancing photosynthetic efficiency.



Functionalities

- Enhances drought tolerance in chickpea through superior allele introgression
- Maintains high agronomic performance and photosynthetic efficiency
- Increases yield and productivity by approximately 15% under drought stress
- Supports pulse self-sufficiency, food security, and nutrition amidst climate change

Key Features

High yield under drought – 15% higher productivity than JAKI 9218

Officially notified – Approved as a Central Variety (CVRC, 2024)

Farmer adoption ready – 32 quintal breeder seed indents received for 2025–26

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Institute of Plant Genome Research, New Delhi, 110067

Sector: **Farm**

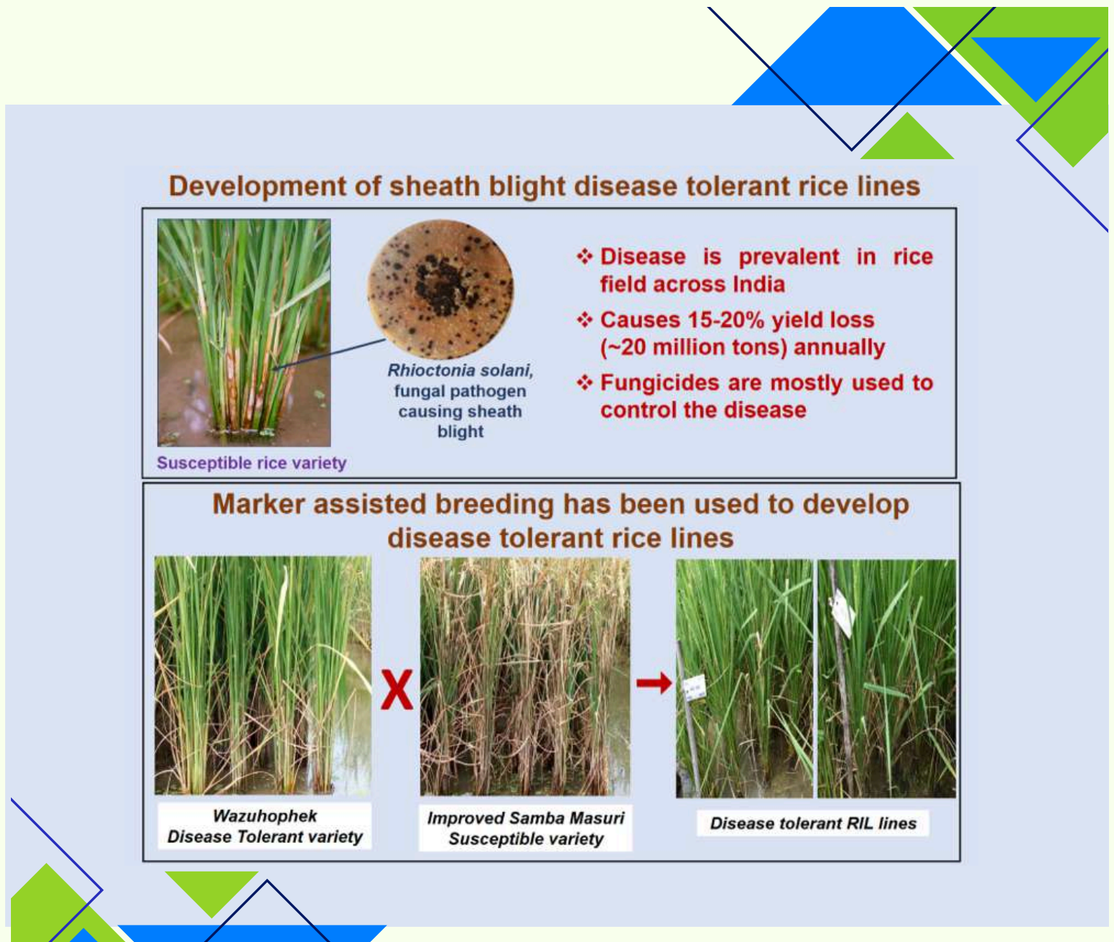
Category : **Integrated Crop & Post-Harvest Systems**

Department of Biotechnology (DBT)

Sheath blight disease resistance rice lines

Overview

Under the BRIC-NIPGR flagship project, NIPGR, New Delhi, and ICAR-IIRR, Hyderabad have jointly identified a genetic locus responsible for sheath blight tolerance in rice and successfully introgressed it into high-yielding varieties DRR Dhan and Swarna. These resistant rice lines, now under multi-location trials, promise significant yield protection and economic savings.



Functionalities

- Confers sheath blight tolerance through identified genetic locus introgression
- Enhances resistance in high-yield rice mega-varieties like DRR Dhan and Swarna
- Reduces annual crop losses by approximately 50%, saving significant economic value
- Supports multi-location trials for validation and future large-scale cultivation

Key Features

Innovative – First-time introgression of tolerance into DRR Dhan and Swarna

Economic – Potential savings of ~₹1500 crore annually by reducing yield losses

Strategic – Donor lines under registration for national breeding programs

Implementation Overview

No	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Institute of Plant Genome Research, New Delhi, 110067

Sector: **Farm**

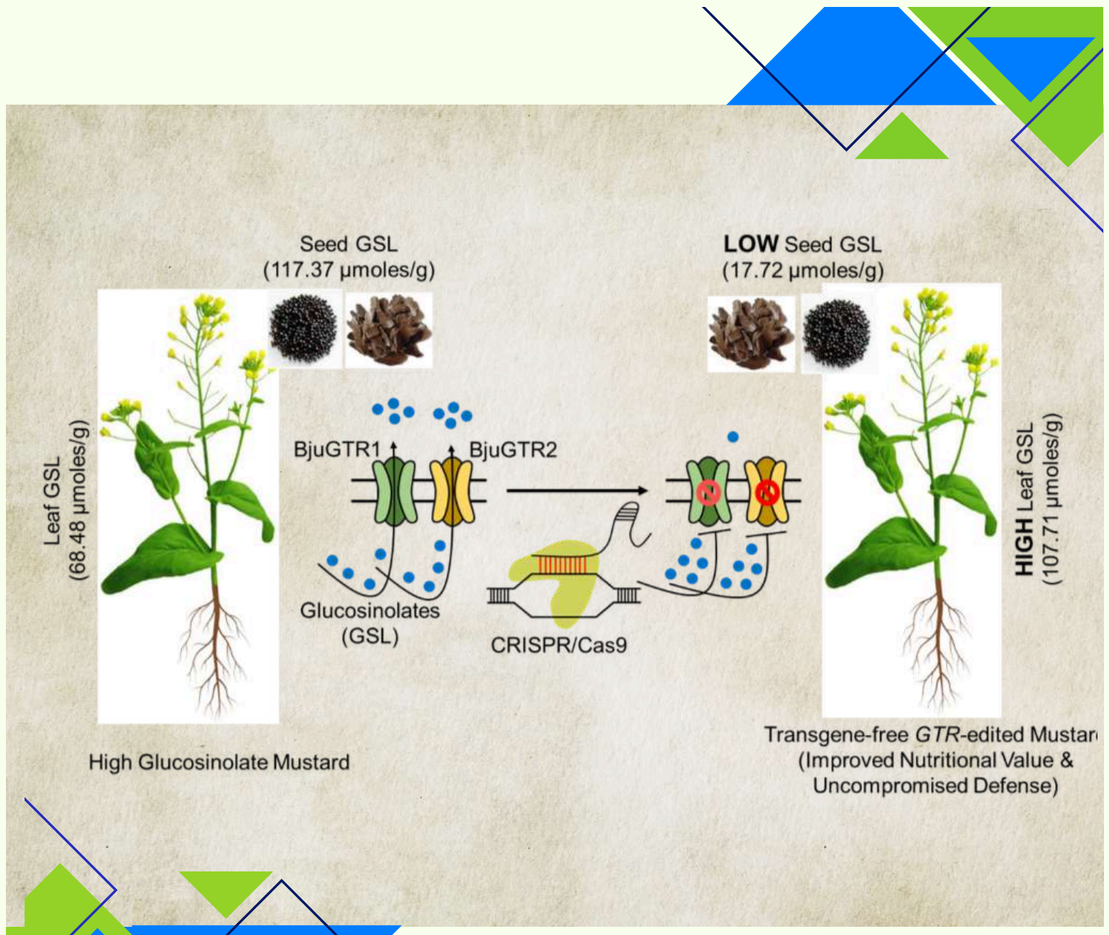
Category : **Integrated Crop & Post-Harvest Systems**

Department of Biotechnology (DBT)

Genome edited LOW-seed, HIGH-leaf glucosinolate Indian oilseed mustard

Overview

Canola-quality mustard with reduced seed glucosinolate has been developed using CRISPR/Cas9-based editing of 10 glucosinolate transporter (GTR) genes. These transgene-free lines combine nutritional quality with enhanced defence by maintaining high glucosinolates in leaves. Currently, two promising LOW-seed, HIGH-leaf glucosinolate lines are under evaluation in 16 ICAR-coordinated AICRP trial locations.



Functionalities

- Reduces seed glucosinolate content to achieve Canola-quality mustard
- Maintains high glucosinolate levels in leaves for enhanced plant defense
- Enhances nutritional quality while retaining desirable agronomic traits
- Supports multi-location evaluation under ICAR-coordinated AICRP trials

Key Features

Precision – CRISPR editing of 10 glucosinolate transporter genes

Regulatory – Deregulated under SDN-1 and SDN-2 genome editing norms

Dual-Trait – Low seed glucosinolate with high leaf defence compounds

Implementation Overview

No	7	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Institute of Plant Genome Research, New Delhi, 110067

Sector: **Farm**

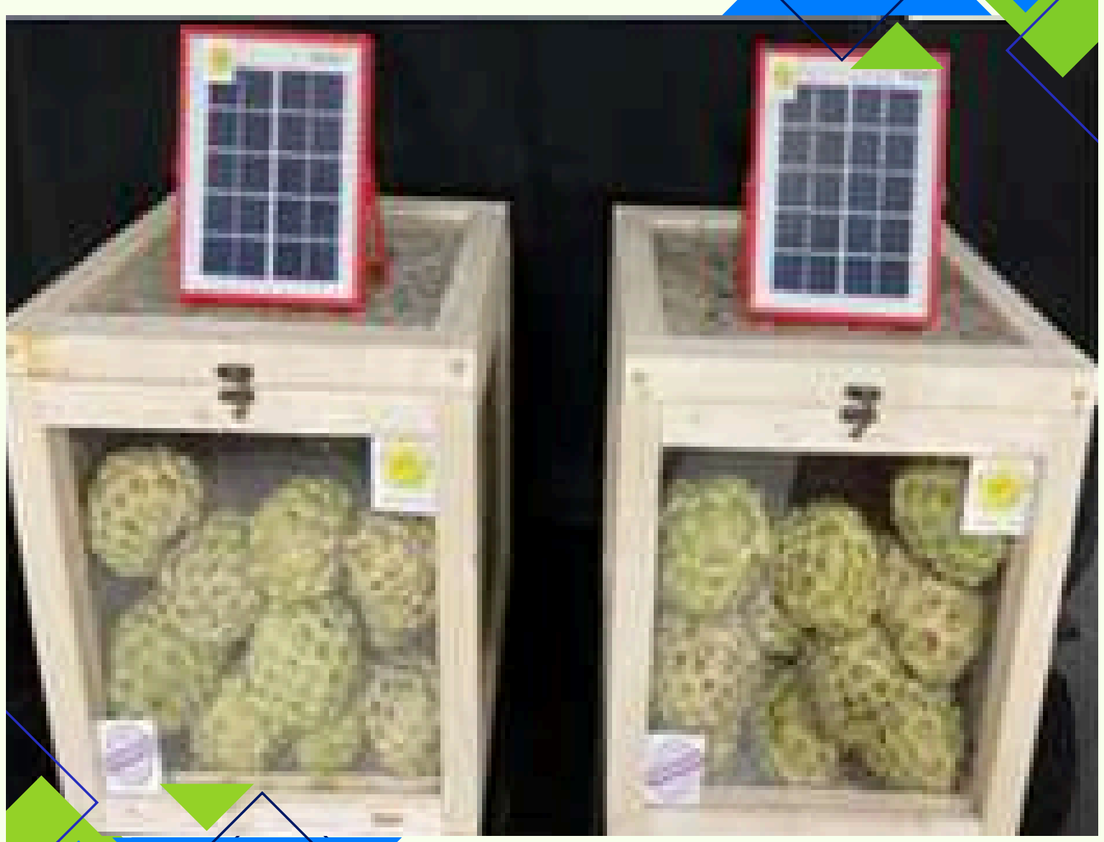
Category : **Integrated Crop & Post-Harvest Systems**

Department of Biotechnology (DBT)

Innovative and cost-effective device to enhance post-harvest shelf-life of fruits and vegetables

Overview

To address post-harvest losses in fruits and vegetables, often exceeding 50% due to inadequate storage and transport; engineered shelf-life enhancer boxes have been developed. These boxes create a controlled hypoxic environment that stimulates nitric oxide release, naturally delaying ripening and extending freshness without refrigeration, offering a cost-effective and deployable preservation solution



Functionalities

- Delays the ripening of fruits and vegetables by inducing hypoxia to stimulate nitric oxide
- Extends the shelf-life of produce by several weeks without refrigeration
- Provides a user-friendly and cost-effective solution for storage and transport
- Reduces losses and lowers costs associated with refrigeration and transportation

Key Features

User-friendly – Designed for easy adoption without technical expertise

Cost-effective – Provides an affordable alternative to refrigeration

Readily deployable – Suitable for immediate use in storage and transport

Implementation Overview

No	9	2
Deployed	Technology	No of training
Readiness	Readiness	days/hours
Level (TRL)	Level (TRL)	required

SCAN HERE FOR MORE

Contact Details

National Institute of Plant Genome Research, New Delhi, 110067

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Biotechnology (DBT)

Nanofilm Production from Agro-Biomass Lignin

Overview

National Agri-Food and Biomanufacturing Institute has developed a sustainable nanocomposite film technology using lignin extracted from agro-waste such as wheat straw and sugarcane bagasse. Through nanoparticle synthesis and biopolymer blending, these biodegradable films offer UV resistance, antioxidant properties, and smart color-changing indicators for freshness detection making them ideal for eco-friendly food packaging and shelf-life enhancement.



Functionalities

- Provides a renewable and biodegradable material extracted from wheat straw
- Serves as a biocompatible polymer for sustainable packaging applications
- Produces flexible, transparent, and cost-effective nanocomposite films
- Offers potential use in the food packaging industry as an eco-friendly alternative

Key Features

Renewable – Utilises agri-waste biomass as raw material

Eco-friendly – Prepared via a green method using simple acids/bases

Stable – Offers high stability with easy preparation and drying process

Implementation Overview

No	6	15
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

BRIC National Agri-Food and Biomanufacturing Institute, BRIC NABI campus, Mohali, Punjab, 140306

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

NanoAqua Nanobubble Generator

Overview

The NanoAqua Nanobubble Generator developed by IIT Ropar-TIF AWaDH improves water quality for ponds, lakes, aquaculture, agriculture, and industrial applications. It generates ultra-fine nanobubbles to increase dissolved oxygen, reduce organic sediment, and naturally control algae. Post-commercialisation support includes training, diagnostics, and performance optimisation.



Functionalities

- Enhances dissolved oxygen and reduces organic sediment in water bodies
- Supports beneficial microbial activity and controls algae naturally
- Provides scalable and energy-efficient water treatment
- Enables industry collaborations, regulatory compliance, and market expansion

Key Features

Innovative – Uses nanobubble technology for superior water treatment

Eco-friendly – Provides chemical-free oxidation and natural algae control

Supported – Offers comprehensive post-commercialisation technical assistance

Implementation Overview

7	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Indian Institute of Technology, Ropar-Technology and Innovation Foundation (AWaDH), First Floor East Wing, M. Visvesvaraya Block, Main Campus, Rupnagar, Ropar, Punjab, 140001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Biodiversity Sensor and Scanner

Overview

IIT Ropar's iHub–AWaDH has developed an advanced Biodiversity Sensor and Scanner under DST's NM-ICPS Mission to revolutionize real-time ecosystem monitoring. The device integrates modular sensors, high-resolution imaging, and AI analytics with 4G and cloud connectivity empowering researchers and policymakers to assess insect diversity, track environmental changes, and support conservation globally.



Functionalities

- Monitors insect species and environmental parameters in natural habitats
- Captures high-resolution images for ecological analysis
- Transfers data in real-time via 4G and stores it locally and in the cloud
- Provides analytics and insights for biodiversity research

Key Features

Modular – Comprises Main PCB, Power PCB, and high-resolution camera

Scalable – Supports real-time data transfer and cloud integration

Supported – Includes post-commercialisation data management and technical assistance

Implementation Overview

10
Deployed

8
Technology Readiness Level (TRL)

2
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Indian Institute of Technology, Ropar-Technology and Innovation Foundation (AWaDH), First Floor East Wing, M. Visvesvaraya Block, Main Campus, Rupnagar, Ropar, Punjab, 140001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Weather Monitoring System

Overview

The Weather Monitoring System is a compact, solar-powered device developed for real-time tracking of temperature, humidity, wind speed, solar radiation, and light intensity. Ideal for agriculture, climate research, and environmental studies, it provides actionable insights with advanced analytics and dashboards. Post-commercialisation support includes remote assistance, on-site maintenance, and software updates.



Functionalities

- Measures environmental parameters like temperature, humidity, wind speed, solar radiation, and light intensity
- Transmits data wirelessly via GSM/4G and supports over-the-air updates
- Operates continuously using solar power with backup battery
- Provides data analysis, visualisation, calibration, and maintenance for reliable performance

Key Features

Compact – Small form factor with high-precision sensors

Durable – IP67 weatherproof design suitable for outdoor conditions

Supported – Post-commercialisation technical assistance, updates, and on-site services

Implementation Overview

No	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Indian Institute of Technology, Ropar-Technology and Innovation Foundation (AWaDH), First Floor East Wing, M. Visvesvaraya Block, Main Campus, Rupnagar, Ropar, Punjab, 140001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Cow Health Monitoring (Moosense)

Overview

The Cow Health Monitoring System developed by IIT Ropar uses a neckband with an accelerometer to track cow activity and health. Data is transmitted to a gateway and processed on the AWS Cloud for real-time monitoring. Post-commercialisation support includes installation guidance, cloud assistance, troubleshooting, and software updates.



Functionalities

- Monitors cow activity and movement through a neckband accelerometer
- Transmits data from multiple nodes to a gateway at regular intervals
- Uploads activity data to the cloud for real-time analysis and monitoring
- Provides insights into cow health by analysing accelerometer patterns

Key Features

Accurate – High-resolution accelerometer ensures precise activity tracking

Scalable – Supports multiple nodes for herd-level monitoring

Supported – Full post assistance including setup, troubleshooting, and cloud support

Implementation Overview

6	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Indian Institute of Technology, Ropar-Technology and Innovation Foundation (AWaDH), First Floor East Wing, M. Visvesvaraya Block, Main Campus, Rupnagar, Ropar, Punjab, 140001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Chloritron – Real-Time Residual Chlorine Monitoring System

Overview

CHLORITRON is an advanced system developed for monitoring residual chlorine in water using the BH5530D sensor. It provides real-time cloud-based data for safe chlorine management. Post-commercialisation support includes device setup guidance, cloud assistance, troubleshooting, and software updates for seamless operation.



Functionalities

- Measures residual chlorine levels continuously with high accuracy
- Transmits data remotely via RS485 Modbus RTU for cloud monitoring
- Alerts users to unsafe chlorine concentrations for timely action
- Integrates with water treatment systems and supports cloud-based analysis

Key Features

Precise – BH5530D sensor ensures accurate chlorine measurements

Reliable – Continuous monitoring safeguards public health and water quality

Supported – Full post assistance including setup, troubleshooting, and cloud support

Implementation Overview

Yes	7	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Indian Institute of Technology, Ropar-Technology and Innovation Foundation (AWaDH), First Floor East Wing, M. Visvesvaraya Block, Main Campus, Rupnagar, Ropar, Punjab, 140001

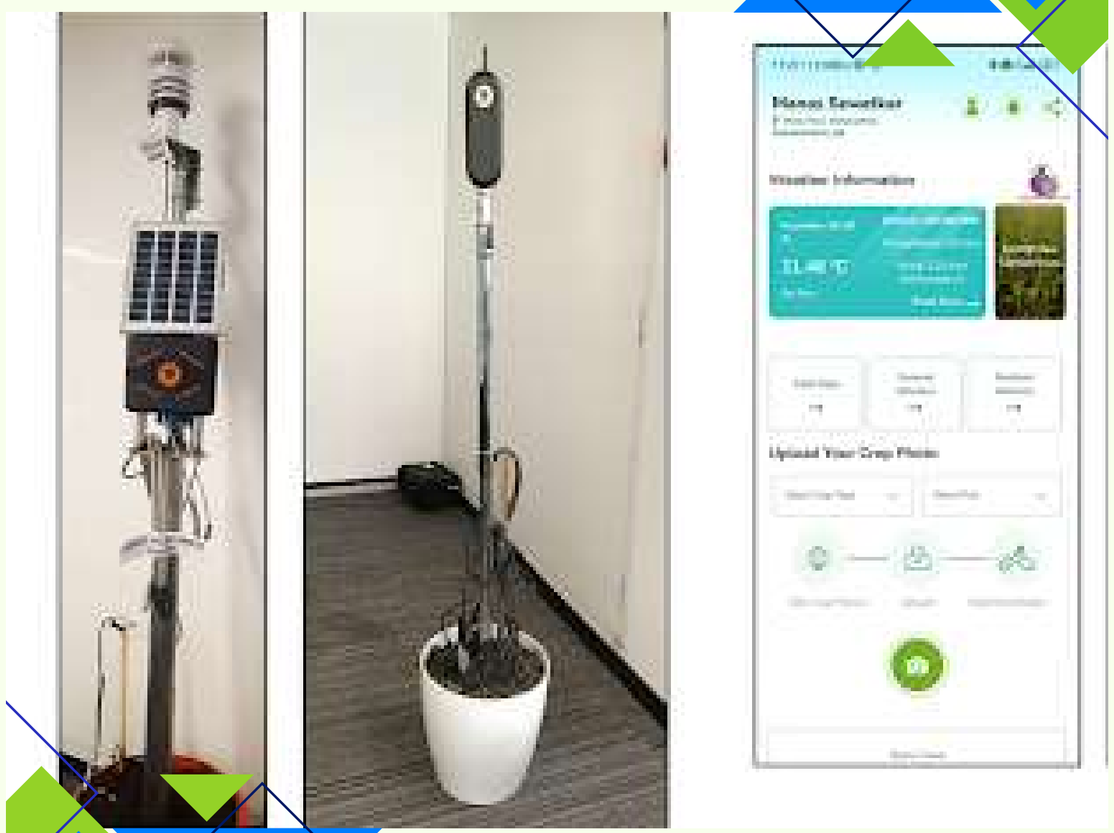
Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Farm Management System

Overview

The Farm Management System developed provides real-time monitoring of soil and weather parameters, crop health, and nutrient requirements. It supports pest and disease risk mitigation, nutrient advisory, and climate-resilient practices. Post-commercialisation support includes installation guidance, troubleshooting, breakdown repair, and on-demand technical assistance.



Functionalities

- Monitors soil parameters and weather conditions for crop management
- Detects crop diseases using image-based analysis and suggests curative measures
- Provides nutrient advisory to optimise crop growth
- Supports climate-resilient agricultural practices using micro-climate data

Key Features

Accurate – Live visuals ensure data-driven decisions

Comprehensive – Covers soil, weather, crop health, and nutrient management

Supported – Full post assistance including installation, troubleshooting, and technical support

Implementation Overview

Yes	7	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

TIH Foundation for IoT & IoE, 3rd floor, CSRE Building, IIT Bombay campus, Powai, Mumbai, Maharashtra, 400076

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Nanasaheb Purple Seedless: Grapes Variety

Overview

Nanasaheb Purple Seedless is a high-yield grape variety developed through mass selection from Sarita Purple Seedless. Known for its bold, oval purple berries and superior taste, it's ideal for raisin production and exports (3 g per berry). Cultivated widely across India, it offers exceptional quality, sweetness (22°Brix), and market adaptability.



Functionalities

- Produces bold, oval, purple-skinned berries with a crispy, delicious taste
- Yields heavy bunches suitable for export-quality raisin production
- Offers high total soluble solids (TSS) of 22°Brix for superior fruit quality
- Supports large-scale cultivation across multiple Indian states for domestic and export markets

Key Features

Yield – Produces heavy bunches averaging 700 g per cluster

Berry Size – Features large, oval berries measuring 2.55 cm

Market Adoption – Widely cultivated across Maharashtra, Andhra Pradesh, Madhya Pradesh, and Karnataka

Implementation Overview

15000
Deployed

9
Technology Readiness Level (TRL)

3
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Sarita Purple Seedless : Grapes variety

Overview

Sarita Purple Seedless is a high-yield grape variety developed from Sarad Seedless, featuring elongated berries (3.5 cm), heavy bunches (550 g), and impressive yields (26.5 t/ha). Cultivated across 20,000 ha in Karnataka, Telangana, and Maharashtra, it is valued for taste, market price, and productivity.



Functionalities

- Produces elongated berries with attractive size and taste
- Yields heavy bunches (550 g) and high overall productivity (26.5 t/ha)
- Supports large-scale cultivation across Karnataka, Telangana, and Maharashtra
- Offers excellent market value for domestic and export purposes

Key Features

Berry Size – Features large, elongated berries measuring 3.5 cm

Yield – Achieves high productivity of 26.5 t/ha

Cultivation – Widely grown across Karnataka, Telangana, and Maharashtra

Implementation Overview

5000	9	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Kudrat 9 – High-Yielding, Nutrient-Rich Wheat Variety

Overview

This wheat variety, developed through mass selection, demonstrates superior multi-location performance with resistance to stem rust, leaf rust, and aphids. It delivers high yields (46–68 q/ha), excellent grain quality, and enhanced micronutrient content (Fe 47.58 ppm, Zn 23.77 ppm), ensuring both productivity and profitability.



Functionalities

- Provides resistance against stem rust, leaf rust, and aphids
- Produces high-yielding grains across diverse agro-climatic zones
- Enhances nutritional quality with elevated iron and zinc content
- Delivers consistent protein content (10–12%) for food and nutrition security

Key Features

Yield – Achieves 46–68 q/ha across multi-location trials

Nutritional Quality – Contains high Fe (47.58 ppm) and Zn (23.77 ppm)

Profitability – Offers 2.43 benefit-cost ratio

Implementation Overview

50	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Kudrat 3 – High-Yielding Perennial Pigeon Pea Variety

Overview

Kudrat-3 pigeon pea, developed through single plant and mass selection, offers high yield performance and perennial growth, eliminating the need for annual re-sowing. Trials across ICAR-IIPR, NIF-Gandhinagar research farm, and 26 KVK locations demonstrated up to 20% higher yield than standard varieties, ensuring wide adaptability and productivity.



Functionalities

- Achieves high yield performance, outperforming check varieties in trials
- Supports perennial cultivation, eliminating the need for annual re-sowing
- Performs consistently across multiple locations under on-farm trials
- Has been successfully disseminated for adoption across the country

Key Features

Yield – Achieves 36.17 q/ha in ICAR-IIPR Kanpur trials

Performance – Outperforms checks by 20.04% in on-farm trials

Adaptability – Successfully disseminated across India and supported through trials

Implementation Overview

60	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Rohit-1 – Early Fruiting, High-Yield Moringa Variety

Overview

Rohit 1, an improved moringa variety developed from Shabnam, demonstrates early fruiting within six months and a high pod yield of up to 150 pods per plant annually. With export-quality, dark green pods rich in Vitamin C, Quercetin, and Phytol, it is widely adopted across several Indian states.



Functionalities

- Exhibits early fruiting within six months of planting
- Produces high pod yield with medium-length, export-quality pods
- Provides nutrient-rich fruits containing Vitamin C, Quercetin, and Phytol
- Supports wide adoption across multiple states and strong market potential

Key Features

Yield – Produces up to 61 kg of pods per 10-year-old plant

Pod Characteristics – Medium-length (50 cm), dark green, export quality

Adoption – Widely cultivated in Maharashtra, Gujarat, Madhya Pradesh, Karnataka, and Chhattisgarh

Implementation Overview

7000	7	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Automatic banana fibre rope making machine-thick fibre of 1mm to 5mm dia

Overview

The automatic banana fibre rope-making machine mechanises traditional rope production, reducing labour from six to four workers. Compact and continuous-operating, it produces 3,750–4,375 m of rope daily and 30,000–35,000 m of rope monthly, minimising fibre damage and optimising time, space, and labour costs. Training is provided.



Functionalities

- Automates rope twisting and winding to streamline traditional rope-making
- Reduces labour requirements from six to four workers while increasing efficiency
- Produces large volumes of rope continuously
- Maintains uniform operation, prevents fibre damage, and supports bulk production

Key Features

High Output – 30,000–35,000m/month capacity

Machine Design – Compact (2.5×2×2 m), continuous operation, and fibre-safe

Energy Efficient – Operates on 0.5 HP motors

Implementation Overview

50	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Multi-Purpose Processing Machine

Overview

Dharamveer's multipurpose portable processing machine extracts juice, pulp, and essential oils from fruits and herbs, serving both food and pharmaceutical industries. With temperature-controlled pressure cooking, automatic shut-off, and multiple capacity models, it enables on-site value addition for farmers. Training is provided.



Functionalities

- Extracts juice, pulp, and essential oils from fruits, herbs, and flowers
- Functions as a temperature-controlled pressure cooker with automatic shutoff
- Processes a wide range of materials including Aloe vera, mango, amla, tulsi, ashwagandha, rose, and lavender
- Enables on-site value addition for farmers, enhancing income potential

Key Features

Versatility – Suitable for both food and pharmaceutical applications

Capacity– Available in multiple models to meet varying processing needs

Training Support – Provided during scheduled period for operational guidance and support

Implementation Overview

500	9	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Kamaal: Herbal Agricultural Formulation

Overview

Kamaal is a herbal, multi-utility agricultural formulation that functions as a growth promoter, fungicide, and termiticide. It is rich in zinc (27.35 mg/kg), copper (5.11 mg/kg), and manganese (173.60 mg/kg), with 45.7% organic carbon. Validated at PAU Ludhiana and SDAU Dantiwada, it enhances soil fertility, boosts crop health, and supports farmers with sustainable agricultural practices.



Functionalities

- Acts as a growth promoter, fungicide, and termiticide for crops
- Enhances soil fertility and water-holding capacity
- Supplies essential nutrients like zinc, copper, manganese, and organic carbon
- Reduces cultivation costs and improves soil health without harmful heavy metals

Key Features

Nutrient-rich – Contains zinc, copper, manganese, and organic carbon

Eco-friendly – Free from harmful heavy metals, promotes soil biodiversity

Cost-effective – Reduces cultivation costs by up to 47%

Implementation Overview

1000	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

HZKB: Traditional Brinjal Variety

Overview

HZKB-1 is a high-yielding, pest-tolerant brinjal variety conserved organically for over five decades. It produces large, shiny, oblong fruits with fewer seeds, demonstrates superior plant growth traits, and is ideal for sustainable organic cultivation. The variety offers farmers higher productivity and better market potential.



Functionalities

- Produces large, dark purple, shiny, oblong fruits with fewer seeds
- Achieves high yield (32.60 kg/plant or 82.60 t/ha) and superior plant growth
- Exhibits pest tolerance and suitability for organic farming
- Supports long-term cultivation and conservation with consistent quality

Key Features

High productivity – Yields up to 82.60 t/ha with 32 fruits per plant

Superior quality – Large, dark purple fruits weighing 100–600 g

Sustainable – Pest-tolerant and ideal for organic farming practices

Implementation Overview

13
Deployed

7
Technology Readiness Level (TRL)

2
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Niranjan Bhata : Improved traditional variety of brinjal

Overview

Niranjan Bhata is an improved traditional brinjal variety developed through selection, known for long, soft, purple-striped fruits with fewer seeds and excellent taste. It demonstrates superior yield and adaptability across multiple states. The variety is pest and disease-tolerant, making it highly suitable for diverse farming systems.



Functionalities

- Promotes high yield with superior fruit length and plant growth
- Provides soft, less-seeded fruits with excellent cooking quality
- Ensures tolerance against major diseases and pests
- Supports adaptability across varied agro-climatic regions

Key Features

Superior yield – Outperforms checks with up to 31.40 t/ha

Distinct fruit quality – Produces 45.80 cm long, purple-striped, soft fruits

Wide dissemination – Adopted in Chhattisgarh, Gujarat, Maharashtra, and Manipur

Implementation Overview

10
Deployed

9
Technology Readiness Level (TRL)

2
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Palli Chilli :Dual Purpose Chilli Variety for Culinary use

Overview

The Palli chilli variety, developed through participatory breeding by the Rupal village community in Gandhinagar, represents a farmer-led innovation in crop conservation and improvement. This high-yielding, dual-purpose variety produces long, bright red fruits with moderate pungency and exceptional processing quality, supporting both cultural heritage and rural livelihoods through value-added applications.



Functionalities

- Promotes higher yield with up to 240.29 q/ha green fruits
- Provides excellent processing traits for chutneys, sauces, powders, and papad
- Ensures strong adaptability across Gujarat, Maharashtra, and West Bengal
- Supports farmers with high market demand and export potential

Key Features

Distinct fruit traits – Long (up to 17 cm), moderately pungent, bright red fruits

Superior yield – Outperforms state and national checks with high productivity

High market value – Strongly demanded by agro-processors and exporters

Implementation Overview

60
Deployed

9
Technology Readiness Level (TRL)

2
No of training days/hours required

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Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

AA : Improved Sorghum Variety

Overview

AA-Sorghum is a dual-purpose, early-maturing variety traditionally conserved by the innovator. Suitable for both Rabi and Kharif seasons, it thrives in drought-prone regions and delivers high grain and fodder yields. With strong adaptability, nutrient richness, and resilience against pests and diseases, it benefits both farmers and livestock, ensuring food and fodder security.



Functionalities

- Promotes sustainable cultivation in drought-prone and low-input areas
- Provides high grain yield (25–30 q/ha) and green fodder yield (220–250 q/ha)
- Enhances soil and crop resilience with tolerance to pests, insects, and diseases
- Supports farmer income and livestock nutrition through dual-purpose use

Key Features

Early maturity – Ready for harvest in 100–110 days, suitable for Rabi and Kharif

Nutrient-rich – High protein content (10.53%–11.80%) for grain and fodder quality

Wide adaptability – Performs well across Gujarat, Maharashtra, and Punjab

Implementation Overview

40	8	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Zion Mundi – Improved variety of pepper

Overview

Zion Mundi is an improved pepper variety, believed to be an open-pollinated progeny of Neelamundi × Thottamundi. Known for its long, compact spikes with high berry count, it demonstrates high yield potential, tolerance to major diseases, and adaptability under shade. With strong performance validated by research institutions, it offers excellent quality for spice production and commercial cultivation.



Functionalities

- Promotes higher productivity through long spikes (15.6 cm) with 80–90 berries
- Provides resilience against major diseases, including foot rot
- Supports commercial adoption with grafted plants and cuttings from nurseries
- Enhances spice quality with significant volatile oil and oleoresin content

Key Features

High yield – Compact spikes with high berry density for superior productivity

Quality traits – Contains 2.6% volatile oil and 7.45% oleoresin

Strong dissemination – Grafted plants and cuttings available through nurseries

Implementation Overview

Yes	7	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Arjun – Improved variety of small cardamom

Overview

Arjun is a high-yielding small cardamom variety developed through clonal selection from the Mysore type. It produces pale green, ovoid capsules with excellent dry recovery and stable yields. Pest-tolerant and robust, it is validated through multi-institution trials, making it highly suitable for commercial cultivation.



Functionalities

- Enhances productivity with high tiller and panicle numbers per clump
- Provides resistance to major pests, including stem borer and thrips
- Supports commercial cultivation with stable, average dry yield (2,000 kg/ha)
- Delivers uniform capsule size and seed count for quality grading

Key Features

Pest tolerance – Resistant to stem borer and thrips for reduced crop losses

Superior yield – Produces 2,000 kg/ha dry capsules with 25 seeds each

Validation – Performance confirmed through ICRI, IISR, and KVK trials

Implementation Overview

Yes	7	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

A new cardamom variety “Elarajan”

Overview

Elarajan is a high-yielding small cardamom variety developed from Mysore Vazuka through natural selection. It produces bold, uniform capsules with superior market value. Pest-tolerant and vigorous, it is validated by multi-institution trials and widely cultivated across Kerala for domestic and export markets.



Functionalities

- Produces bold and uniform capsules for premium market pricing
- Enhances yield up to 12,500 kg/ha green cardamom
- Provides moderate resistance to pests and diseases
- Supports large-scale cultivation for domestic and export demand

Key Features

Bold capsules – 8–9 mm size with 80–90% extra-bold capsules for higher market value

High yield – Achieves 12,500 kg/ha green yield under Kerala conditions

Validation – Performance confirmed through ICRI, Idukki, and IISR, Calicut trials

Implementation Overview

Yes	7	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Punnathanam Jathy – Improved variety of Nutmeg

Overview

This improved nutmeg variety, developed through the selection of larger kernels, produces extra-large fruits with superior kernel and mace yields. It has a thicker fruit skin that minimises breakage, starts bearing early, and demonstrates pest resistance. Validated through institutional trials, it is widely cultivated across Kerala for its productivity and quality.



Functionalities

- Produces extra-large fruits with higher nut and mace yield
- Promotes early bearing, starting from the fourth year
- Provides natural resistance against pests and fruit cracking
- Supports year-round harvesting with thrice-annual fruiting

Key Features

Extra-large fruits – 4.5 cm × 3 cm, with 20 g nuts and 4 g mace

High yield – 50 nuts give 1 kg and 250 mace yield 1 kg

Validation – Performance confirmed by IISR, Calicut, and KVK, Idukki

Implementation Overview

Yes
Deployed

7
Technology Readiness Level (TRL)

2
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

A new high yielding variety of pepper “Pepper Thekken”

Overview

“Pepper Thekken,” developed from the unique Azhukal pepper plant, features branched spikes with 60–80 branches and 800–1,000 berries per spike. High-yielding and disease-resistant, it offers strong market potential and income opportunities for growers due to its exceptional productivity.



Functionalities

- Produces high-yield branched spikes with 800–1,000 berries per spike
- Exhibits disease resistance for healthy crop growth
- Supports income generation due to strong market demand
- Enables propagation through cuttings for rapid multiplication

Key Features

Unique morphology – Branched spikes with high berry density

High productivity – Generates abundant pepper yield per plant

Market potential – Strong demand and income opportunities for growers

Implementation Overview

Yes	7	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

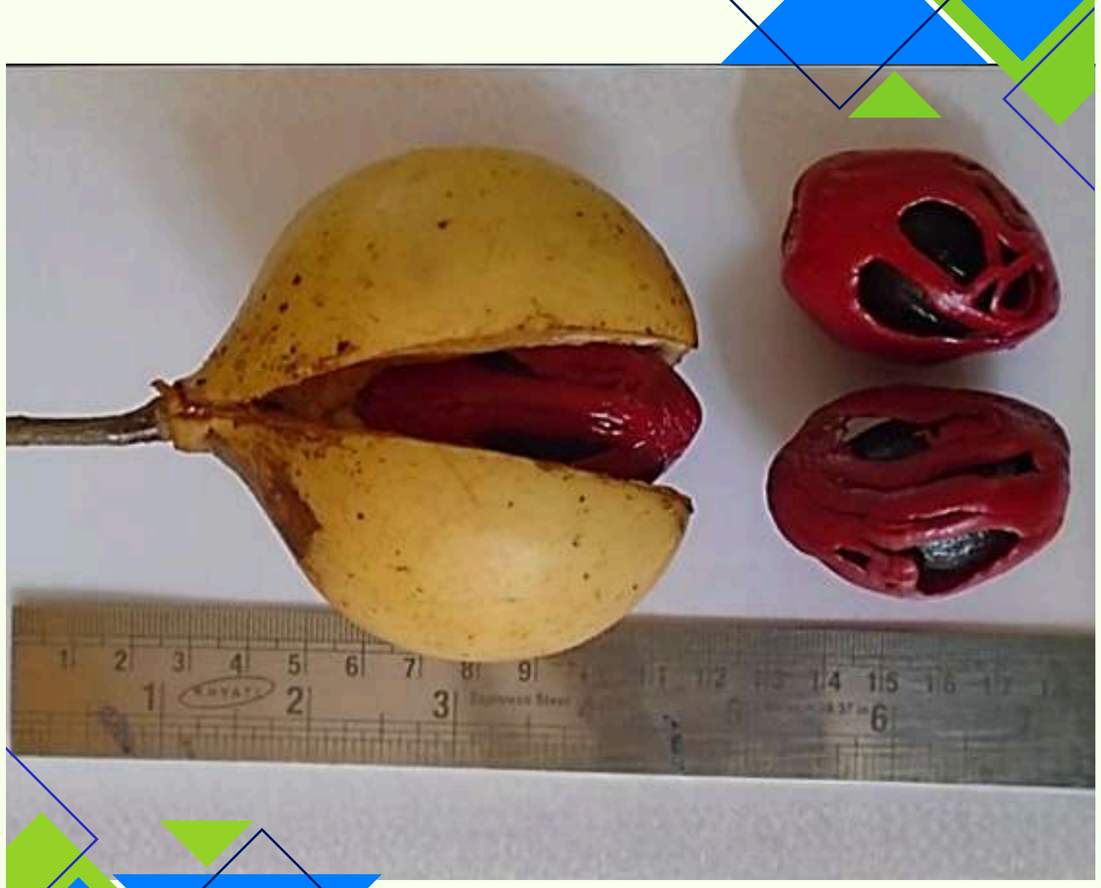
Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Improved nutmeg variety : Edavarembil Gold

Overview

Edavarembil Gold, developed through mass selection, is a nutmeg variety with horizontal branching, bold nuts, and dark red mace. Tested at ICAR-IISR, Kozhikode, it showed the highest essential oil content (13–15%) and α-limonene (9.84%). Drought-tolerant with extended shelf life, it provides high yield and market appeal.



Functionalities

- Produces bold nuts with dark red mace and high essential oils
- Exhibits drought tolerance and extended shelf life for fruits and mace (5–6 days)
- Achieves high yield potential (200 kg per 10-year-old plant)
- Offers superior quality and market appeal, benefiting farmers economically

Key Features

High quality – Rich in essential oil (13–15%) and α-limonene (9.84%)

High productivity – Yields up to 200 kg per 10-year-old plant

Farmer benefit – Popular in Idukki, Kerala, for income generation

Implementation Overview

Yes	7	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

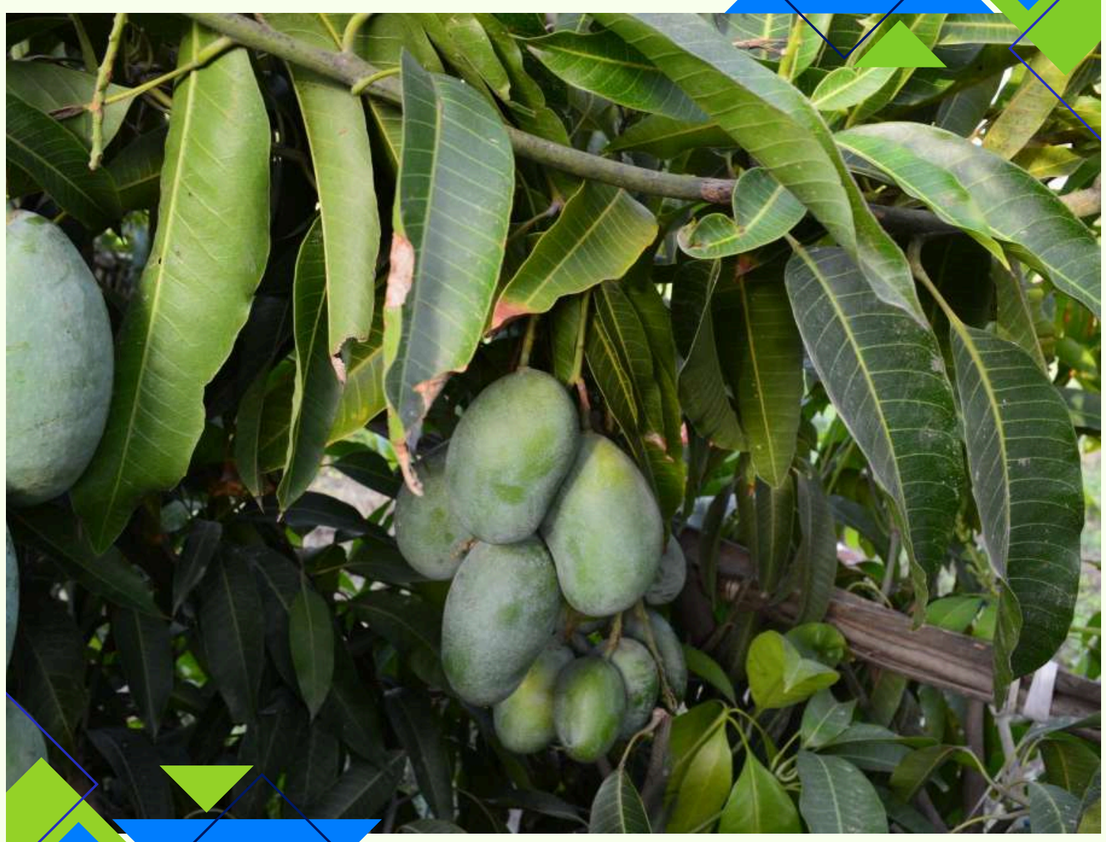
Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Sadabahar: Mango Variety

Overview

This mango variety, verified by NIF and ICAR-IIHR and developed by Sadabahar Aam Nursery, is distinct for its bunch-bearing and year-round blooming cycle, producing fruits across three seasons. With deep orange, sweet, minimal fibre flesh, it is a dwarf, disease-tolerant, and ideal for high-density plantations. Its off-season availability ensures strong market demand and profitability.



Functionalities

- Bears fruits year-round with sweet, deep orange, low-fiber flesh
- Supports dwarf growth, disease tolerance, and suitability for kitchen gardens and high-density plantations
- Meets off-season mango demand and commands high market value
- Provides consistent fruiting, profitability, and wide adoption

Key Features

Unique trait – Bunch-bearing and continuous blooming across seasons

Market value – Consistent off-season supply ensures premium pricing

Wide adoption – Over 10,000 grafted plants sold

Implementation Overview

100
Deployed

7
Technology Readiness Level (TRL)

3
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Digital Agri Village

Overview

The Digital Agri Village by Tadoba Solutions uses AI and digital tools to support 7 lakh+ farmers with crop protection, nutrient optimisation, weather-based decisions, and direct market access. It promotes eco-friendly farming, clean energy adoption, and provides ongoing support through KVKs and app-based services.



Functionalities

- Provides real-time solutions for crop protection, pest and nutrient management
- Enables eco-friendly farm planning by integrating soil health, weather data, and market demand
- Facilitates direct farmer-to-market access via an online agri-platform
- Promotes clean energy adoption with solar PV and customised industrial solutions

Key Features

Real-Time Analytics – Precision insights via digital tools

Smart Connectivity – Accessible through app and KVKs

Farmer Empowerment – Boosts income and self-reliance

Implementation Overview

Yes	8	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Contact Details

IIT Bhilai Innovation and Technology Foundation, IBITF Office, Level - 4, LDC Building, Bhilai, Chhattisgarh, 491002

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Sitara Sringar: Improved Mustard Variety

Overview

The Sitara Sringar mustard variety, developed through natural hybridisation, offers high seed yield (18–22 q/ha), oil content (up to 42%), and tolerance to pod shattering, waterlogging, and Alternaria leaf blight. Tested across nine states, including CCSHAU Hisar, RARI Jaipur, SKUAST Jammu, and PAU Punjab, it adapts to diverse climates and saline water, providing farmers with superior performance and reliability.



Functionalities

- Produces high seed yield with up to 42% oil content
- Exhibits tolerance to pod shattering, waterlogging, Alternaria leaf blight, and saline conditions
- Outperforms popular varieties in plant height, seed, and straw yield
- Reduces unwanted seedlings and supports cultivation across diverse climatic regions

Key Features

High-Yield – Produce a high yield of 18–22 q/ha and oil content up to 42%

Superior– Excels in plant height, seed, and straw yield.

Supported – Seeds are disseminated to farmers with guidance on cultivation practices

Implementation Overview

Yes	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Madhuvan Gajar: Improved Carrot Variety

Overview

The Madhuvan Gajar carrot variety, improved from a traditional local cultivar, delivers high yields (45–50 t/ha) with superior nutritional content, including β-carotene and iron. With long, minimally forked roots and excellent storage quality, it supports value-added products and has benefited over 1,000 farmers across eight states.



Functionalities

- Produces high root yield (45–50 t/ha) with superior biomass
- Offers rich nutritional content, including β-carotene and iron
- Features long, uniform roots with excellent storage quality
- Supports value-added products and benefits large-scale cultivation across multiple states

Key Features

High-yielding – Produces 45–50 t/ha with uniform, long roots

Nutrient-rich – Contains 277.75 mg/kg β-carotene and 276.7 mg/kg iron

Supported – Seeds distributed to farmers with guidance on cultivation and utilisation

Implementation Overview

30	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Sonali 45: Improved Cauliflower Variety

Overview

The Sonali 45 cauliflower variety, selected from the traditional Kuvari variety, delivers early-maturing, compact white curds (350–450 g) with high yield (18–20 t/ha). Tolerant to major pests and diseases, it is suitable for early sowing and has been successfully marketed across Bihar, Uttar Pradesh, Maharashtra, and Nepal.



Functionalities

- Produces early-maturing, compact white curds weighing 350–450 g
- Achieves high yield (18–20 t/ha) and outperforms popular check varieties
- Exhibits tolerance to major pests and diseases, suitable for early sowing
- Supports wide market adoption

Key Features

High-yielding – Produces 18–20 t/ha with uniform curds

Early-maturing – Ready for harvest earlier than check varieties

Validation – Field trials at RPCAU and BHU confirmed early maturity.

Implementation Overview

80
Deployed

9
Technology Readiness Level (TRL)

2
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

G-Vilas Pasand: Improved Guava Variety

Overview

This guava variety, selected from a local cultivar and evaluated by ICAR-CISH, produces large (250–300 g), sweet, aromatic fruits with golden yellow skin and soft white flesh. It fruits year-round, offers a high economic yield (50–60 kg/5-year-old plant), and has a shelf life of 5–6 days. Over 29,000 saplings were distributed across 10 states.



Functionalities

- Fruits year-round, producing large, sweet, and aromatic fruits (250–300 g)
- Offers high economic yield (50–60 kg per five-year-old plant) and strong market potential
- Features golden yellow skin, soft white flesh, and a shelf life of 5–6 days
- Supports widespread adoption, with over 29,000 saplings distributed across 10 states

Key Features

High-yielding – Offers superior fruit production compared to local cultivars

Market-preferred – Fruits have an attractive size, taste, and aroma

Supported – Saplings and cultivation guidance provided for farmers' adoption

Implementation Overview

150
Deployed

8
Technology Readiness Level (TRL)

2
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Riyawan Silver: Improved Garlic variety

Overview

This garlic variety, developed through selective breeding, produces large, white, compact bulbs with up to 20 cloves per bulb. Maturing in 131 days, it offers high yield (103.24 q/ha) and excellent storage potential (up to 10 months). Trials at RVSKVV, Gwalior, confirmed superior performance over popular checks.



Functionalities

- Produces large, white, compact bulbs with up to 20 cloves per bulb
- Achieves high yield (103.24 q/ha) and outperforms popular check varieties
- Matures in 131 days, suitable for timely harvesting
- Offers storage capacity up to 10 months and yield potential of 120 q/ha

Key Features

High-yielding – Outperforms checks with a significant yield advantage

Superior quality – Bulbs are white, compact, and suitable for long-term storage

Dimensions – Height of 75.33 cm, bulb weight of 23.07 g, and clove length of 25.21 mm

Implementation Overview

6	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

HRMN-99 : Low chilling apple variety

Overview

The HRMN 99 apple variety, developed from a seedling grown in warm conditions in Paniyala, Bilaspur, was evaluated by IARI Shimla. It produces large, sweet, and soft fruits (84–178 g) with high TSS (11–14.2). Early blooming and harvesting avoid heavy rainfall, making it suitable for plains and tropical areas (up to 45°C). Over 6 lakh plants distributed across 23 states, boosting commercial cultivation.



Functionalities

- Produces large, sweet, and soft fruits weighing 84–178 g with 11–14.2° TSS
- Offers high yield of up to 60 kg per 7-year-old plant
- Features early blooming (Feb–March) and harvest by early June to avoid heavy rainfall
- Thrives in plains and tropical areas

Key Features

High-yielding – Ensures up to 60 kg of fruit per mature plant

Climate-resilient – Thrives in plains and tropical conditions up to 45°C

Scientifically Validated – Superior quality validated by ICAR-NEH, Manipur and GSBTM, Gandhinagar

Implementation Overview

235	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

SK 4: Improved Turmeric variety

Overview

The SK-4 turmeric variety, developed from the local Kadapa variety through clonal selection, delivers high rhizome yield (56 t/ha) and finger weight (736 g/plant). It outperforms checks like Krishna, Rajapuri, Salem, and PDKV-Waigaon, tolerates leaf spot and rhizome rot, and has high curcumin content (4.64%) with excellent colour values (L: 64.63, A: 22.31, B: 94.15). Widely adopted by farmers in Maharashtra.



Functionalities

- Delivers superior rhizome yield of 56 t/ha with 1–2.6 kg/plant
- Exhibits tolerance to leaf spot and rhizome rot for reliable cultivation
- Records high curcumin content (4.64%) with excellent colour values
- Supports farmer adoption and market demand in Maharashtra districts

Key Features

High-yielding – Produces up to 56 t/ha of rhizomes and 736 g/plant finger weight

Disease-tolerant – Resistant to leaf spot and rhizome rot

Supported – Adoption guidance and cultivation practices shared with farmers in Raigarh, Sindhudurg, and Ratnagiri districts

Implementation Overview

36	8	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Sandip Pyaz: Improved Onion Variety

Overview

This onion variety, developed from Fursungi local through mass selection, delivers high bulb yield (38.06 t/ha) with an average bulb weight of 82.40 g. It shows better skin retention, lower purple blotch incidence (10.75%), faster maturity (121.3 days), improved keeping quality, and resistance to *Stemphylium* blight, thrips, and physiological weight loss. Multilocation testing and cultivation guidance have been validated by NHRDF and Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth.



Functionalities

- Provides high bulb yield of 38.06 t/ha with 82.40 g average bulb weight
- Enhances resistance to purple blotch (10.75%), *Stemphylium* blight, and thrips
- Matures early at 121 days for timely harvest
- Improves keeping quality with lower splitting and reduced storage losses

Key Features

High-yielding – Produces up to 38.06 t/ha with an average bulb weight of 82.40 g

Resistant – Tolerant to purple blotch, *Stemphylium* blight, and thrips infestation

Supported – Multilocation testing and cultivation guidance provided

Implementation Overview

94
Deployed

9
Technology Readiness Level (TRL)

2
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

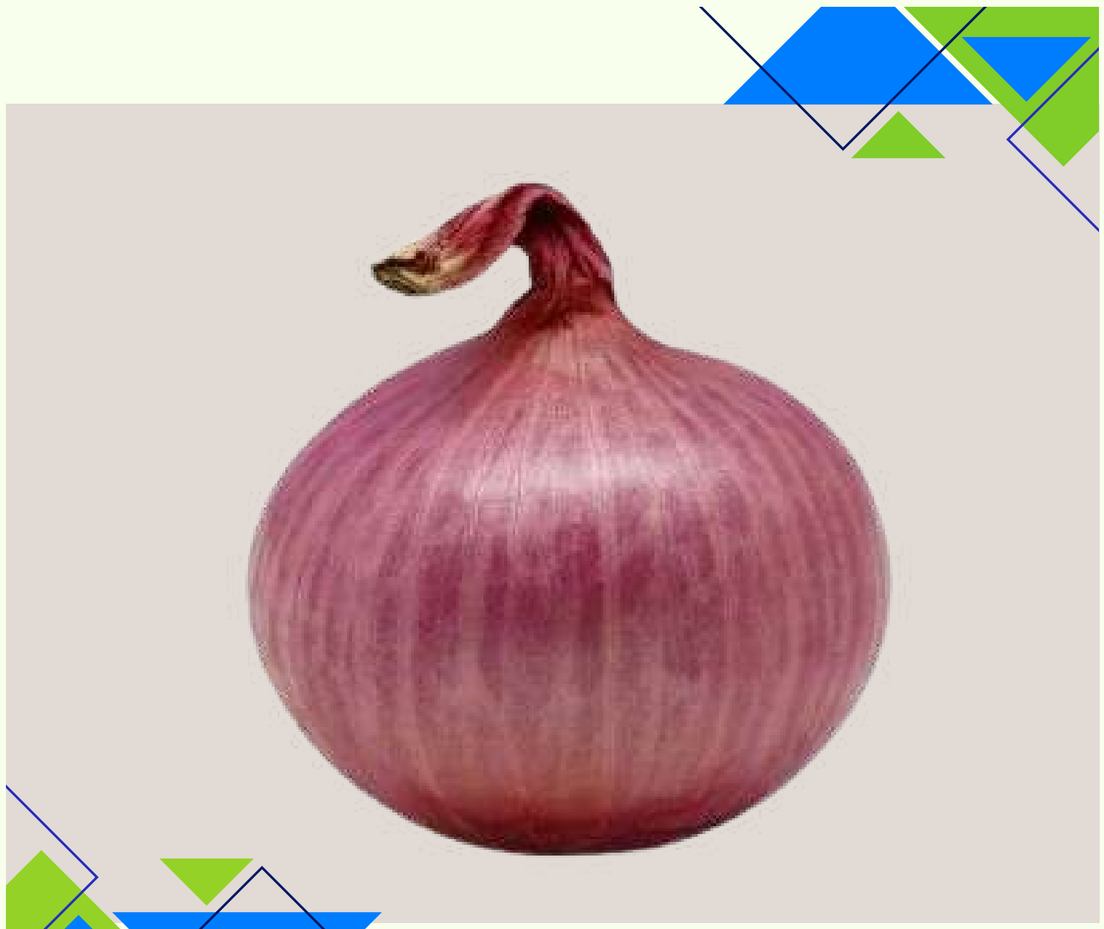
Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Sona 40: Improved Onion Variety

Overview

Sona 40, developed from N-2-4-1, yields 33.61 t/ha with heavier bulbs (73.3 g), better skin retention, and lower purple blotch (24.2%). Maturing in 118 days, it shows higher TSS (12.19%), minimal splitting (3.23%), and good storage. Trials by BSKKV, NHRDF, and KVK Sultanpur confirmed high yield, low weight loss, and adaptability, with reduced Stemphylium blight and thrips.



Functionalities

- Enhances bulb yield and size for farmers
- Reduces disease incidence and pest damage
- Improves shelf life and storage quality
- Ensures higher TSS and better marketability

Key Features

Superior yield – Produces 33.61 t/ha with heavier bulbs (73.30 g)

Tolerance – Resists *Stemphylium* blight and reduces purple blotch (24.20%)

Adaptable – Performs well across multiple regions with proven field trial results

Implementation Overview

Yes	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Low Cost Power weeder and Low Cost Biochar machine

Overview

Developed by IIT Palakkad with the support of DST, the biochar machine and power weeder provide affordable, eco-friendly mechanization solutions for farmers. The biochar unit transforms crop residues into soil-enriching carbon, while the power weeder reduces manual labor through efficient field preparation, promoting sustainable agriculture and improved soil productivity.



Functionalities

- Converts crop residues into biochar efficiently
- Mechanizes weed removal to reduce drudgery
- Prepares soil with adjustable depth control
- Adapts to multiple crops and terrains

Key Features

Low-Cost Design- Affordable for farmers

Fuel Efficiency - Operates with minimal energy input or uses biomass as fuel

Portable & Compact - Easy to transport and use in small or hilly plots

Implementation Overview

Yes	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

IIT Palakkad Technology IHub Foundation (Startup- Agriwaste Pvt Ltd), Property No. 1353, Jalgaon, Maharashtra, 425507

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Department of Science and Technology (DST)

Electric Bull

Overview

The Electric Bull, developed by Krishigati Private Limited, is a self-propelled electric agricultural toolbar integrating precision seed placement, mechanical weed management, soil conditioning, and agrochemical application. It improves soil structure, reduces operational costs by 60–80%, supports crop diversification, and is fully operational (TRL 9) with post-commercialisation digital and local support.



Functionalities

- Enhances precision farming and intercultural operations
- Reduces operational costs and emissions
- Improves soil structure and resource use efficiency
- Facilitates crop diversification and higher productivity

Key Features

Multi-functional – Integrates seeding, weeding, soil care, and spraying

Cost-efficient – Cuts costs by 60–80%, aiding the 2x Income mission

Supported – Backed by digital tools, manuals, partners, and subsidies

Implementation Overview

11	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Krishigati Private Limited,
Manufacturing Unit: Gat No. 391, Dhanore Village,
Alandi-Markal Road,
Pune, Maharashtra 412105

Sector: **Farm**

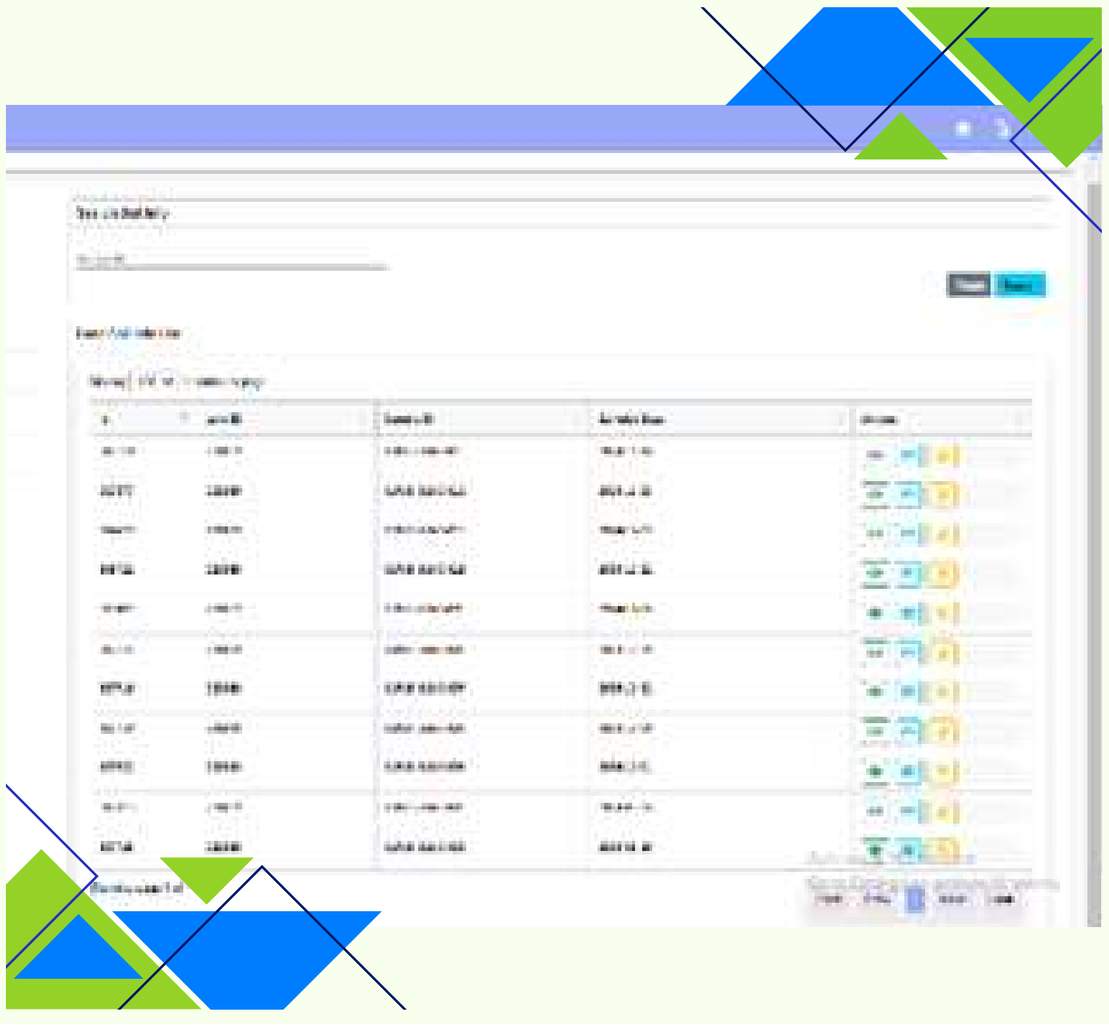
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Regenerative Agriculture Stack Architecture

Overview

Regenerative Agriculture Stack Architecture RASA is an open, independent platform that centralises knowledge across the “Seed to Food” ecosystem. It leverages deep-tech innovations from Indian agri-startups to promote regenerative agriculture practices, addressing key challenges in farming and food value chains.



Functionalities

- Aggregates and disseminates agricultural knowledge
- Promotes regenerative farming practices
- Supports informed decision-making across the seed-to-food value chain
- Enhances collaboration among agri-tech startups and stakeholders

Key Features

Open architecture – Transparent and accessible knowledge platform

Deep-tech integration – Utilises innovations from agri-startups

Support services – Provides guidance and resources for ecosystem stakeholders

Implementation Overview

Yes	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

IITM Pravartak Technologies Foundation,
10/12t3 Apex Colony,
Komarapalayam,
Namakkal, Tamil Nadu,
638183

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Sandalwood Cultivation Technology for Saline Soils

Overview

A novel sandalwood (*Santalum album*) cultivation technology enables growth in marginal saline soils by using host species like *Melia dubia, Dalbergia sissoo, Melia dubia, Dalbergia sissoo, Azadirachta indica, and Casuarina equisetifolia*. It enhances salinity tolerance, biomass production, and offers farmers a sustainable way to transform degraded lands into profitable plantations.



Functionalities

- Promotes sandalwood growth under saline stress
- Enhances K^+/Na^+ balance for improved resilience
- Ensures higher biomass and commercial viability
- Transforms saline lands into productive plantations

Key Features

Salinity tolerance – Maintains a favourable K^+/Na^+ ratio

Host integration – Uses species like *Melia dubia* and Neem

Economic impact – Provides a profitable plantation model

Implementation Overview

Yes	7	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

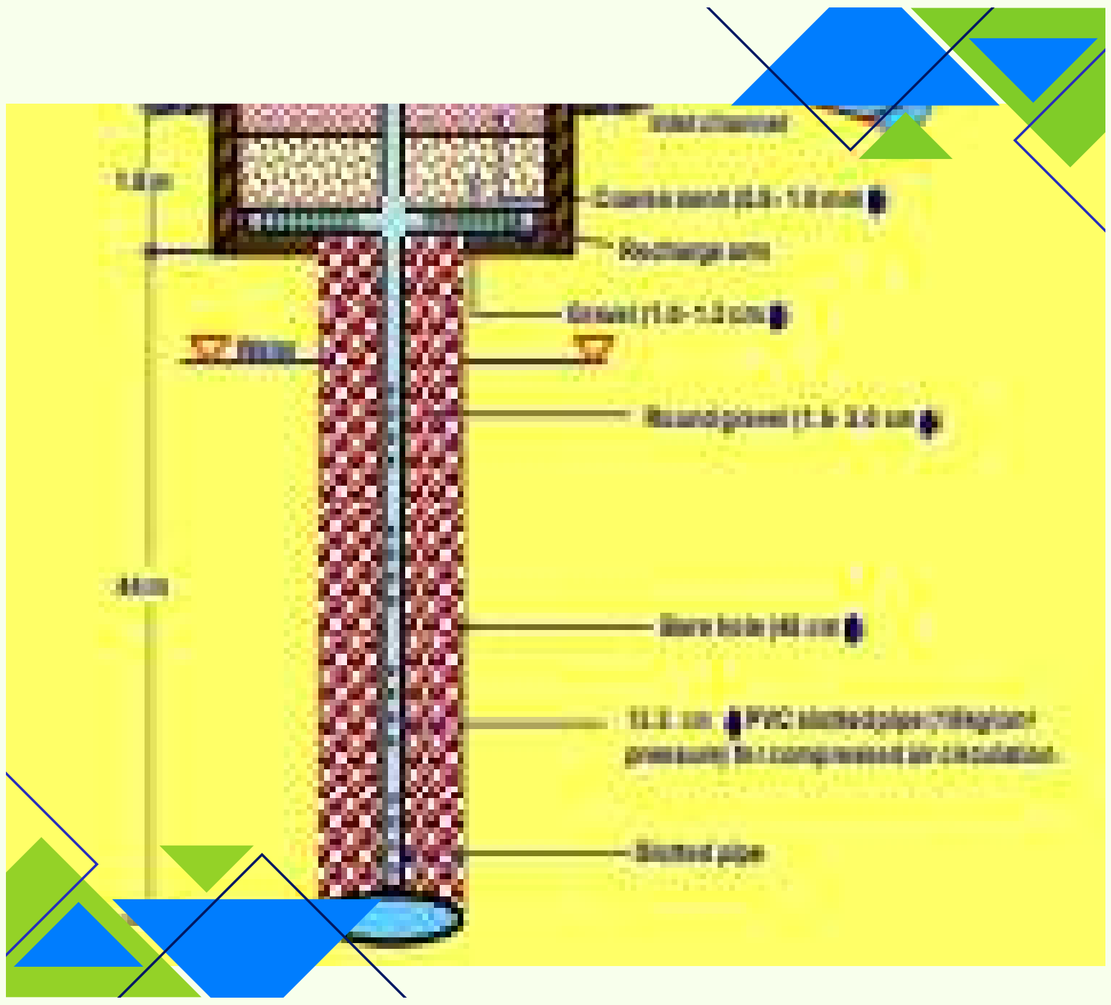
Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Farmer-Operated Gravity-Based Groundwater Recharge System

Overview

Farmer-oriented groundwater recharge structures divert excess rain and canal water into sandy subsurface zones through borewells and filters. Easy to maintain, these small-scale systems reduce flooding and enhance groundwater levels, benefiting farmers across Haryana, Punjab, Uttar Pradesh, and Gujarat.



Functionalities

- Promotes groundwater recharge using excess surface water
- Ensures sustainability through farmer-managed filter cleaning
- Reduces surface flooding in low-lying areas
- Enhances water availability for agriculture

Key Features

Simple design – Borewell with sand, gravel, and boulder filters

Farmer-friendly – Easy cleaning and maintenance by users

Proven success – Implemented at 85 sites across four states

Implementation Overview

26	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Sub surface Drainage Technology

Overview

Sub-surface drainage (SSD) is a proven technology developed by ICAR-CSSRI during 1980s for reclaiming waterlogged saline soils using underground perforated PVC pipe networks. Widely adopted across India, it boosts cropping intensity, enhances yields, and delivers significant economic, food security, and employment benefits.



Functionalities

- Promotes reclamation of waterlogged saline soils
- Ensures higher crop productivity and intensity
- Enhances farmer income and rural employment
- Reduces soil salinity through effective drainage

Key Features

Proven impact – Yield gains up to 215% and cropping intensity rise by 25–100%

Economic viability – IRR of 17%, BCR of 1.46, and payback in 5 years

Large-scale adoption – Implemented across ~75,000 ha in multiple states

Implementation Overview

No	9	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Gypsum for reclamation of sodic soil

Overview

Sodic soils pose a major constraint to crop productivity and require gypsum application for reclamation. The gypsum technology developed by ICAR-Central Soil Salinity Research Institute karnal package integrates soil and water management practices with amendment application to restore soil health, enhance crop yields, and boost food grain production.



Functionalities

- Reclaims sodic soils through gypsum application and soil–water management
- Improves crop productivity by enabling better nutrient use efficiency
- Enhances water management with land leveling, bunding, and drainage
- Contributes significantly to national food grain production

Key Features

Large-scale adoption – Reclaimed ~2.22 million ha of sodic soils across India

Food security impact – Added ~16.60 million tonnes of food grains to the national pool

Sustainability – Provides an integrated, long-term package for soil health restoration

Implementation Overview

No	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Land Shaping Technology for Paddy-cum-Fish Cultivation in Coastal Saline Soils

Overview

This integrated land management practice involves digging trenches around farmland while leaving a 3.5 m outer boundary. The excavated soil is used to create dikes, which conserve rainwater and support vegetables, green manuring crops, fruit crops, and multipurpose trees. The system enhances land utilisation by enabling paddy and fish cultivation in Kharif and low water-requiring crops in non-trench areas.



Functionalities

- Creates dikes with trench soil to protect and harvest rainwater
- Utilises dikes for vegetables, fruit crops, green manures, and trees
- Allocates land for paddy–fish cultivation in Kharif
- Grows low water-requiring crops in non-trench areas

Key Features

Efficient land use – Integrates paddy, fish, horticulture, and tree crops within one system

Water control– Dikes and trenches ensure rainwater harvesting and regulated flow

Credit support – Initial financial assistance is needed for land excavation

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Land Shaping technology : Deep Farrow Ridge

Overview

This land management system divides half the farmland into ridges and furrows to prevent salinity and congestion. Ridges grow vegetables, furrows harvest rainwater and support fish, while the rest supports paddy–fish in Kharif and low-water crops in Rabi, ensuring year-round income.



Functionalities

- Prevents drainage congestion and salinity through ridge–furrow design
- Grows vegetables and horticultural crops on ridges
- Harvests rainwater and supports fish culture in furrows
- Enables paddy–fish in Kharif and low-water crops in Rabi

Key Features

Integrated– Combines vegetables, horticulture, paddy, and fish within one system

Water-smart design – Furrows harvest rainwater while reducing drainage congestion

Credit support – Financial assistance is needed for land excavation and setup

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Land Shaping technology : Farm pond

Overview

This land shaping technology converts about 20% of farmland into a 3 m deep farm pond for rainwater harvesting. Dug-out soil creates high land for vegetables and fruits, medium land for rice, and low land for low water-requiring crops. Stored rainwater provides irrigation, enhancing year-round farm productivity. Credit support is required for initial land excavation.



Functionalities

- Converts 20% farm area into 3m pond for rainwater harvesting
- Utilises dug-out soil to form high, medium, and low lands
- Grows vegetables and fruits on high land, rice on medium land
- Cultivates low-water crops on lowland with stored rainwater irrigation

Key Features

Rainwater storage – Pond captures and stores runoff for irrigation

Land optimisation – Excavated soil creates varied elevations for different crops

Credit support – Financial assistance needed for pond construction and land shaping

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Zero-Tillage Potato Farming with Paddy Straw Mulching

Overview

Zero-till potato cultivation involves sowing potatoes in wet fields after monsoon rice harvest using paddy straw mulch. It conserves irrigation water, prevents soil salinity, and improves soil health while increasing yield and profitability. Farmers require support for disease-free, high-quality seed potatoes.



Functionalities

- Cultivates potatoes in wet fields after monsoon rice without tillage
- Uses paddy straw mulch to save water and prevent salinity
- Increases cropping intensity, yield, and profit
- Reduces irrigation needs and enhances soil health

Key Features

Water efficiency – Mulching reduces irrigation requirements and conserves moisture

Yield– Zero-till method increases productivity and cropping intensity

Farmer support – Assistance needed for disease-free quality seed potatoes

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Microbial Compost Enricher Block for Rapid Nutrient Mineralization

Overview

The Compost Enricher Block developed by ICAR- Central Soil Salinity Research Institute contains beneficial microorganisms that stabilise compost and mineralise key soil nutrients like Nitrogen, Phosphorus, Potassium, and Zinc. It enhances soil fertility and supports sustainable farming practices. The product has been submitted to Agrinnovate India, New Delhi, for commercialisation.



Functionalities

- Stabilises compost for improved nutrient retention
- Mineralises essential soil nutrients like nitrogen, phosphorus, potassium, and zinc
- Promotes sustainable soil fertility management
- Supports sustainable and eco-friendly waste recycling

Key Features

Microbial activity – Infused with effective organisms to enhance compost quality

Nutrient enrichment – Improves the availability of essential nutrients in soil

Commercial support – Submitted to Agrinnovate India for commercialisation

Implementation Overview

No	8	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

HALO-CRD: Microbial formulation for crop residue decomposition

Overview

HALO-CRD: Microbial formulation developed by developed by ICAR- Central Soil Salinity Research Institute for crop residue decomposition uses halophilic ligno-cellulolytic bacteria for efficient degradation of paddy crop residues, enhancing nutrient recycling and soil fertility in normal and salt-affected soils. It is eco-friendly, cost-effective, and licensed. Techno-commercial support is provided as per license terms.



Functionalities

- Degrades crop residues both in situ and ex-situ
- Recycles nutrients to improve soil fertility and health
- Reduces environmental hazards by preventing residue burning
- Enhances productivity in normal and salt-affected soils

Key Features

Eco-friendly – Safe and sustainable alternative to residue burning

Nutrient recycling – Enhances fertility in normal and saline soils

Commercial support – Licensed for mass production with techno-commercial assistance

Implementation Overview

No	9	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute
Karnal, Zarifa Farm,
Kachhwa Road Karnal,
Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Halo-MIX: A consortia microbial formulation for salt affected soils

Overview

Halo-MIX: A consortia microbial formulation for salt-affected soils developed by ICAR- Central Soil Salinity Research Institute uses halophilic plant growth promoters and nutrient mobilizers to improve soil fertility, enhance crop yields, and mitigate salinity stress. It is eco-friendly, cost-effective, and licensed. Techno-commercial support is provided as per license terms.



Functionalities

- Enhances soil fertility and crop productivity
- Mitigates tahe dverse effects of salts on plants
- Maintains overall soil health and sustainability
- Promotes eco-friendly and cost-effective agricultural practices

Key Features

Eco-friendly – Safe and sustainable alternative for soil management

Yield enhancement – Boosts crop productivity under saline conditions

Commercial support – Licensed with techno-commercial assistance for production and marketing

Implementation Overview

No	9	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

HALO-PSB: Liquid Phosphorus-Solubilizing Biofertilizer for Salt-Affected Soils

Overview

HALO-PSB is a phosphorus-solubilising bacterium that converts insoluble soil phosphorus into plant-available forms using organic acids and metabolites. Suitable for rice, wheat, mustard, maize, and vegetables, it has been applied over 1,900 acres in 17 salt-affected districts of Uttar Pradesh. Licensed to M/s Parashar Agrotech Bio Pvt. Ltd, Varanasi with techno-commercial support.



Functionalities

- Solubilises insoluble phosphorus in soil for plant uptake
- Enhances nutrient availability and crop growth
- Supports sustainable and eco-friendly farming practices
- Can be applied across multiple crops including cereals, oilseeds, and vegetables

Key Features

Eco-friendly – Safe microbial solution for nutrient management

Nutrient boost - Converts insoluble phosphorus to usable form

Commercial support – Licensed with techno-commercial assistance for production and distribution

Implementation Overview

No	9	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

HALO-AZO: Nitrogen-Fixing Biofertilizer for Salt-Affected Soils

Overview

HALO-AZO is an *Azotobacter* sp.-based bio-formulation that fixes atmospheric nitrogen in soil and makes it available to plants. With additional plant growth-promoting traits such as IAA and siderophore production, it supports crop growth under salt stress. Applicable for rice, wheat, mustard, millets, and vegetables, the technology is provided with techno-commercial support under license.



Functionalities

- Fixes atmospheric nitrogen and enriches soil fertility
- Produces IAA and siderophores to enhance plant growth
- Promotes stress tolerance, particularly in salt-affected soils
- Suitable for a wide range of crops including cereals, oilseeds, and vegetables

Key Features

Biological nitrogen fixation – Supplements nitrogen requirement of crops

Plant growth – IAA and siderophore production improve root and shoot growth

Stress tolerance – Enhances productivity in salt-affected soils

Implementation Overview

No	9	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

GypKit: An On-Farm Sodicity Assessment & Gypsum Estimation Kit

Overview

GypKit is a farmer-friendly field kit designed for rapid assessment of soil sodicity and estimation of gypsum requirement to reclaim sodic soils. By determining gypsum needs before chemical reclamation, it prevents over- or under-application of amendments, ensuring effective soil management. The kit is portable and can be conveniently used on farms.



Functionalities

- Rapidly assesses soil sodicity at the field level
- Estimates the precise gypsum requirement for reclamation
- Ensures efficient use of resources by avoiding over or under-use of the application
- Portable, electricity-free solution suitable for farmers

Key Features

Licensed- Licensed and transferred to M/s Parashar Agrotech Bio Pvt Ltd, Varanasi

Resource optimisation - Ensures precise gypsum use, avoiding waste

Farmer-friendly design – Portable and does not require electricity or power source

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CSR76: High-Yield Salt-Tolerant Rice Variety for Sodic Soils

Overview

CSR 76 is a medium-tall, high-yielding rice variety developed by ICAR- Central Soil Salinity Research Institute and released by the U.P. State Variety Release Committee in 2021. It is tolerant to sodic soils (pH 9.2–9.7), moderately resistant to major pests and diseases, and delivers stable yields with excellent grain quality, milling recovery, and cooking properties.



Functionalities

- Ensures reliable performance in both normal and sodic soil conditions
- Promotes higher yields with improved grain recovery and quality
- Enhances farmer resilience against pests and diseases
- Supports sustainable cultivation in stress-prone environments

Key Features

Stress tolerance – Performs well in sodic soils with pH up to 9.7

High grain quality – Long slender grains with good cooking attributes

Yield stability – Produces 6.0–6.5 t/ha in normal soils and 4.0–4.5 t/ha in sodic soils

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CSR105: High-Yield Aerobic Rice Variety with Superior Grain Quality

Overview

CSR105 is a high-performing aerobic rice variety developed for water-saving cultivation in Haryana and Gujarat. It delivers superior yields under limited-water conditions, with excellent grain quality, high hulling and milling recovery, and long slender kernels. The variety consistently outperforms national and zonal checks, offering reliable productivity and market acceptance.



Functionalities

- Promotes water-efficient rice cultivation under aerobic conditions
- Ensures higher productivity compared to existing check varieties
- Enhances grain quality for consumer and market preference
- Supports sustainable farming in water-scarce regions

Key Features

Grain quality – Long slender white kernels with high hulling (77.5%) and milling (66.05%)

Yield advantage – 31% and 52% higher yield than national and zonal checks

Market suitability – High head rice recovery (55.20%) and amylose content (25.58%)

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CSR104: Early-Maturing Sodicity-Tolerant Rice Variety for Alkaline Soils

Overview

CSR 104 is a short-duration, salt-tolerant rice variety recommended for cultivation in Uttar Pradesh and Haryana. It performs well in sodic soils (pH 9.8–10) with minimal stress effects, ensuring stable yields, early maturity, and suitability for crop rotation in salt-affected areas.



Functionalities

- Promotes rice cultivation in sodic and alkaline soils
- Ensures early maturity for timely harvesting and crop rotation
- Maintains grain yield stability under stress conditions
- Supports farmer income in salt-affected regions

Key Features

Plant type – Short stature (85–95 cm) with tolerance to sodic soils (pH 9.8–10)

Duration – Early flowering (85–100 days) with stable performance under stress

Yield potential – 6.0–6.5 t/ha in normal soils and 4.0 t/ha in sodic soils

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CSR101: Dual Stress–Tolerant, High-Yield Rice Variety with BB Resistance

Overview

CSR101 is a climate-resilient rice variety designed for stress-prone ecologies. It offers high yield, semi-dwarf stature, and superior grain quality, performing well under alkaline and saline soils in southern India. It reduces yield losses in areas with poor-quality irrigation water and erratic rainfall. With strong disease resistance and stable yields, this variety improves farmer profitability and supports ICAR's mandate for sustainable, climate-resilient agriculture.



Functionalities

- Enhances rice production in saline and alkaline soils
- Ensures resistance to bacterial blight for stable yields
- Provides superior grain and cooking quality
- Supports farmers in Kerala, Tamil Nadu, and Karnataka

Key Features

Genetic traits – Carries xa13 and Xa21 genes with Saltol QTL for stress tolerance

Growth – Semi-dwarf, non-lodging stature with 125–130 days maturity

Yield – 3.5 t/ha in alkaline, 3.9 t/ha in saline, and 5.5 t/ha in normal soils

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CS 64: High-Oil, Salt-Tolerant Mustard Variety for Northwestern India

Overview

CS 64 is a high-yield mustard variety developed for salt-affected regions of northern India. It matures in 130 to 138 days, boasts an oil content of 40 to 41%, and shows strong resistance to several diseases, including Alternaria blight, white rust, powdery mildew, downy mildew, stag head, Sclerotinia stem rot, and mustard aphid. This variety performs well in both saline and normal soil conditions.



Functionalities

- Enhances mustard productivity in saline and sodic soils
- Provides resistance against major diseases like Alternaria blight and white rust
- Ensures high oil content for quality seed and market value
- Supports cultivation in the northern plains and hill regions

Key Features

Yield – 27–29 q/ha in normal soil and 20–23 q/ha in salt-affected soils

Growth – Plant height 160–168 cm with 1000-seed weight 5.0–5.3 g

Resistance– Tolerant to major diseases and mustard aphid

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CS 62: High-Yield, High-Oil Mustard Variety for Sodic and Irrigated Soils

Overview

CS 62 is a high-yielding mustard variety developed for irrigated sodic soils in Uttar Pradesh. It matures in 136 days and has an oil content of 39.5%. This variety shows strong resistance to various diseases, including Alternaria blight, white rust, powdery mildew, downy mildew, stag head, and Sclerotinia stem rot. Additionally, it is resilient against aphid infestations and performs well in both saline and normal soil conditions.



Functionalities

- Enhances mustard productivity in sodic and normal soils
- Provides resistance against major diseases like Alternaria blight and white rust
- Ensures high oil content for quality seed and market value
- Supports timely sowing for optimal yield

Key Features

Yield – 25–27 q/ha in normal soils and 20–22 q/ha in sodic soils

Growth – Plant height 168 cm, maturing in 136 days

Resistance – Tolerant to major diseases and aphids

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CS 61: High-Yield, Salt-Tolerant Mustard Variety for Sodic Soils

Overview

CS 61 is a high-yield mustard variety suitable for irrigated sodic soils in Uttar Pradesh. It matures in 132 days and produces 39% oil content. This variety exhibits strong resistance to several diseases, including Alternaria blight, white rust, powdery mildew, downy mildew, stag head, Sclerotinia stem rot, and aphid infestation. CS 61 performs well in both sodic and normal soil conditions.



Functionalities

- Enhances mustard productivity in sodic and normal soils
- Provides resistance against major diseases like Alternaria blight and white rust
- Ensures high oil content for quality seed and market value
- Supports timely sowing for optimal yield

Key Features

Yield – 25–28 q/ha in normal soils and 21–23 q/ha in sodic soils

Growth – Plant height 181 cm, maturing in 132 days

Resistance – Tolerant to key diseases and aphids

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CS 60: High-Oil, Salt-Tolerant Mustard for Saline and Sodic Soils

Overview

CS 60 is a mustard variety developed for salt-affected areas across Haryana, Punjab, Rajasthan, and Uttar Pradesh. With a maturity period of 125–132 days, it provides stable productivity under both normal and saline conditions. The variety contains 41% oil and shows tolerance to Alternaria blight, white rust, powdery mildew, downy mildew, staghead, Sclerotinia stem rot, and aphid infestation. Its robust plant growth makes it a reliable choice for farmers in stress-prone regions.



Functionalities

- Enhances yield potential under both normal and salt-affected soils
- Provides high oil content and quality seed production
- Demonstrates strong resistance to major mustard diseases and pests
- Supports sustainable cultivation in saline and sodic conditions

Key Features

High Yield – 25–29 q/ha in normal soils and 20–22 q/ha in salt-affected soils

High Oil Content (41%) – Ensures better market returns and profitability

Multi-Disease Resistant – Tolerant to major diseases and aphid infestation

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CS 58: High-Yield, Salt-Tolerant Mustard Variety for Northwestern Plains

Overview

CS 58 is a mustard variety developed for salt-affected regions of Haryana, Punjab, Rajasthan, and Uttar Pradesh. With a maturity period of 130–135 days, it delivers reliable productivity under both normal and saline conditions. The variety offers 40% oil content, robust plant growth, and tolerance to Alternaria blight, white rust, powdery mildew, downy mildew, staghead, Sclerotinia stem rot, and aphid infestation, making it well-suited for sustainable mustard cultivation in stress-prone areas.



Functionalities

- Enhances farm productivity under saline and sodic soil conditions
- Ensures stable yields and high oil content across diverse environments
- Reduces crop losses through strong resistance to major mustard diseases
- Promotes sustainable cultivation practices in salt-affected regions

Key Features

Salt–Sodicity Tolerance – Thrives at ECe 11 dS/m and pH 9.4

High Productivity – 26–28 q/ha in normal soils

Broad Disease Resistance – Tolerant to blight, rusts, mildew, aphids

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

KRL 283: Multi-Stress Tolerant Wheat Variety for Sodic and Saline Soils

Overview

KRL 283 is a salt-tolerant wheat variety released in 2018 for Uttar Pradesh. It yields 58–62 q/ha under normal soils and 45–48 q/ha in sodic soils (pH 9.0–9.3). With a maturity of 134–143 days, tolerance to salinity (6.7 dS/m), and multiple stress resistances, it is a reliable choice for sustainable wheat production in stress-prone areas.



Functionalities

- Promotes wheat cultivation in saline and sodic soils
- Ensures stable yields under abiotic and biotic stress conditions
- Enhances resilience against lodging, waterlogging, and salinity
- Protects crops through resistance to major wheat diseases and pests

Key Features

High Yield Stability – 58–62 q/ha under normal soils; 45–48 q/ha in sodic soils

Optimal Growth – Plant height 83–90 cm; maturity in 134–143 days

Multi-Stress Tolerance – Handles sodicity, salinity (6.7 dS/m), waterlogging, rusts, Karnal bunt, and insect pests

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

KRL 213: A Salt-Tolerant Wheat Variety for Saline and Alkaline Soils

Overview

KRL 213 is a semi-dwarf, salt-tolerant wheat variety developed by ICAR for saline (ECe 6.0 dS/m) and alkaline (pH up to 9.2) soils. With amber-colored grain, 11% protein content, and strong resistance to major wheat diseases, it yields 3.3 t/ha under salt stress and up to 6 t/ha under normal soils, outperforming traditional checks.



Functionalities

- Promotes wheat cultivation in saline and alkaline soils
- Ensures stable productivity under both stress and normal conditions
- Protects crops against yellow and brown rusts, blights, and bunts
- Enhances farm profitability through higher yields and better grain quality

Key Features

High Yield – 3.3 t/ha under stress; up to 6 t/ha in normal soils

Growth – Semi-dwarf stature, amber grain, 11% protein content

Dual Stress Tolerance – Withstands salinity (ECe 6.0 dS/m) and alkalinity (pH 9.2)

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

KRL 210: A Salt-Tolerant Wheat Variety for Improved Yields

Overview

KRL 210 is a semi-dwarf, salt-tolerant wheat variety suitable for saline soils (pH up to 9.3; EC up to 6 dS/m) and normal conditions. With amber, bold grains, 11% protein content, and high hectolitre weight (77 kg), it yields 3–5 t/ha under salt stress and up to 7 t/ha in favourable conditions, providing a 26.8% yield increase over Kharchia 65.



Functionalities

- Promotes wheat cultivation in saline and normal soils
- Ensures high grain quality with bold, amber-colored kernels
- Protects crops against rusts, loose smut, Karnal bunt, flag smut, and shoot fly
- Supports higher productivity and farmer income on salt-affected lands

Key Features

Yield- 3–7 t/ha (up to 27% higher than Kharchia 65)

Growth – Semi-dwarf stature, matures in 143 days; amber, bold grains with 11% protein

Resistance – Tolerant to salinity and resistant to rusts, smuts, Karnal bunt, flag smut, and shoot fly

Implementation Overview

No	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Integrated Coastal Rice Management Package for Salt-Affected Soils

Overview

A scientifically optimized package of practices designed to improve rice productivity in salt-affected coastal soils using salt-tolerant varieties (Goa Dhan 1–3). It integrates bioformulation-based seed and nursery treatments, adjusted fertilizer schedules, and age-specific transplanting. The system enhances yield, reduces input costs, and ensures sustainable rice cultivation in saline coastal environments.



Functionalities

- Promotes the use of salt-tolerant rice varieties for higher yields in saline soils
- Ensures improved soil fertility and crop nutrition through bioformulation and optimised fertilisers
- Reduces cultivation costs by omitting unnecessary inputs like potassium
- Provides scientific guidance and telephonic support for farmers

Key Features

Variety – Utilises salt-tolerant varieties Goa Dhan 1, 2, and 3

Cost-Optimized Nutrition – Reduces inputs by omitting potassium

Yield-Enhancing Practices – Bioformulation treatments boost productivity

Implementation Overview

7	7	20
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR- Central Coastal Agriculture Research Institute, NRM Section, Old Goa, 403402

Sector: **Farm**

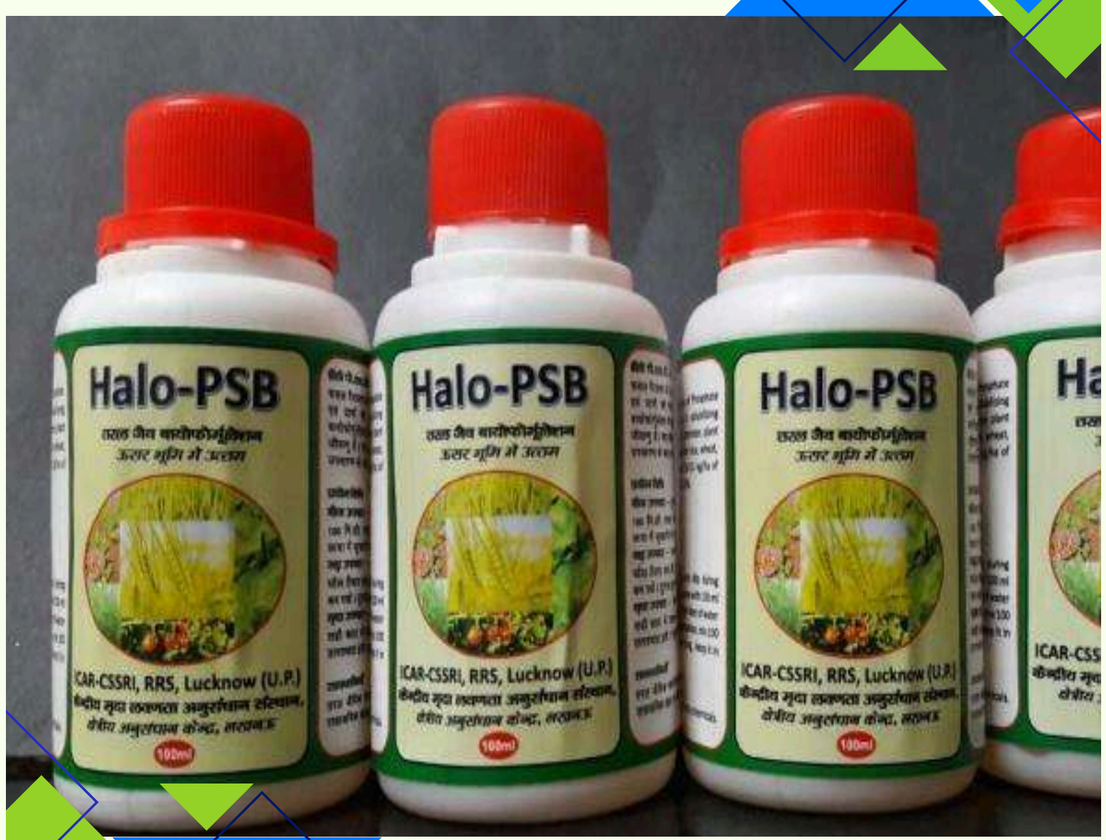
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

HALO-PSB: Phosphorus-Solubilizing Biofertilizer for Salt-Affected Soils

Overview

HALO-PSB is a liquid formulation of phosphorus-solubilising bacteria developed that converts insoluble soil phosphorus into plant-available forms through the secretion of organic acids and metabolites. It enhances nutrient availability and can be applied to rice, wheat, mustard, maize, and vegetable crops. Deployed across 1,900 acres in 17 salt-affected districts of Uttar Pradesh, it is licensed to M/s Parashar Agrotech Bio Pvt. Ltd, Varanasi.



Functionalities

- Promotes phosphorus solubilization and availability in soils
- Enhances the growth and yield of rice, wheat, mustard, maize, and vegetable crops
- Improves soil fertility and nutrient use efficiency
- Supports sustainable agriculture in salt-affected soils

Key Features

Formulation – Liquid bacterial preparation for easy soil application

Crop Applicability – Suitable for rice, wheat, mustard, maize, and vegetables

Coverage – Successfully deployed across 1,900 acres in 17 salt-affected districts

Implementation Overview

Yes	**9**	**5**
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

HALO-AZO: Nitrogen-Fixing Biofertilizer for Salt-Affected Soils

Overview

HALO-AZO is a free-living *Azotobacter* sp. that fixes atmospheric nitrogen, making it available to plants and supplementing crop nitrogen requirements. It also produces IAA and siderophores, promoting growth under salt stress. It is applicable for rice, wheat, mustard, millets, and vegetable crops.



Functionalities

- Promotes nitrogen fixation in soil for crop nutrition
- Enhances plant growth under salt stress through IAA and siderophore production
- Supplements nitrogen requirements for multiple crops
- Supports sustainable farming in salt-affected soils

Key Features

Biological Nitrogen Supply – Reduces chemical Nitrogen use

Multi-Crop Compatibility – Suitable for rice, wheat, mustard, millets, and vegetables

Stress Tolerance – Promotes growth under salt-affected soil conditions

Implementation Overview

Yes	9	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Agroforestry-Based Fodder Production Under Eucalyptus Plantations

Overview

Field experiments undertaken by ICAR-Central Soil Salinity Research Institute on intercropping fodder grasses like *Fodder Sorghum, Dichanthium annulatum* (Marvel Grass), and *Sorghum halepense* (Johnson Grass) with tree species (*Eucalyptus camaldulensis* and *Acacia mangium*) showed better fodder yields under Eucalyptus plantations. These silvi-pastoral systems enhance fodder production and generate significant additional revenue making agroforestry a productive and sustainable option for livestock feed enhancement in marginal lands.



Functionalities

- Enhances fodder yield through tree-grass intercropping systems
- Generates additional income from commercial fodder production
- Promotes sustainable land use combining forestry and pasture
- Improves resource efficiency and soil health under plantation systems

Key Features

High Fodder Yield – Eucalyptus intercropping increases fodder production across all three grasses

Revenue– Provides significant gross income from the fodder component

Sustainable Land Use – Integrates tree plantations with fodder crops for multifunctional benefits

Implementation Overview

No	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CSC-025: High-Yield Salt-Tolerant Asiatic Cotton

Overview

CSC-025 is a salt-tolerant (ECe 9.0 dS/m), high-yielding genotype of Asiatic diploid cotton (Gossypium herbaceum L) developed for salt-affected Vertisols. It consistently delivers superior seed cotton yield, boll weight, and improved leaf K/Na ratio, making it highly resilient and productive under saline soil conditions in Gujarat and similar regions.



Functionalities

- Enhances cotton yield under saline environments
- Produces heavier bolls, improving fibre and economic returns
- Improves physiological tolerance with a superior ionic balance (K/Na)
- Suitable for sustainable cotton cultivation in salt-affected regions

Key Features

Higher Yield Advantage – 21% more than check

Superior Boll Weight – 2.98 g per boll

Enhanced Salt Tolerance – Strong K/Na regulation

Implementation Overview

No	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CSC-057: Salt-Tolerant, High-Yield Asiatic Cotton

Overview

CSC-057 is a salt-tolerant (ECe 9.0 dS/m), high-yielding Asiatic diploid cotton (Gossypium herbaceum L) suitable for salt-affected Vertisols of Gujarat. It delivers 8.1% higher seed cotton yield and improved boll weight, along with a superior leaf K/Na ratio, enhancing productivity under salinity stress.



Functionalities

- Ensures higher cotton yield under saline conditions
- Improves boll quality and weight for better market returns
- Maintains ion balance, enhancing plant salt tolerance
- Promotes cultivation in salt-affected soils for sustainable production

Key Features

Salt Tolerance – Thrives in soils with ECe up to 9.0 dS/m

High Yield – Seed cotton yield of 14.6 q/ha, 8.1% higher than check variety

Superior Physiology – Leaf K/Na ratio of 5.5 for better salinity resilience

Implementation Overview

No	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CSR 101: Salt-Resilient, High-Yield Rice Variety

Overview

CSR 101 is a MAS-derived NIL of Pusa 44 variety, developed by combining two bacterial blight resistance genes (xa13 and Xa21) and Saltol QTL for salt tolerance. It is semi-dwarf, non-lodging, and offers superior grain quality, yielding 3.5 t/ha under alkaline, 3.9 t/ha under saline stress, and 5.5 t/ha under normal conditions. Recommended for time-sown irrigated ecologies of Kerala, Karnataka, and Tamil Nadu.



Functionalities

- Enhances yield under alkaline and saline stress conditions
- Provides resistance to bacterial blight
- Provides premium grain and cooking quality
- Supports semi-dwarf, non-lodging plant architecture

Key Features

Salt Tolerance – Performs well under saline and alkaline soils

High Yield – 3.5–5.5 t/ha depending on soil conditions

Disease Resistance – Resistant to bacterial blight with xa13 and Xa21 genes

Implementation Overview

No	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Soil Salinity Research Institute Karnal, Zarifa Farm, Kachhwa Road Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Eco-Smart Nano Shield for Crop Disease Management

Overview

Copper and silver nanoparticles synthesized through a green route were formulated into nanocomposites and validated against major crop pathogens. Demonstrating strong antibacterial activity against *Xanthomonas oryzae pv. oryzae* and antifungal action against *Rhizoctonia solani*, the technology also controlled chickpea wilt. Net house validations confirm readiness for multi-location field trials in rice (*Oryza sativa*) and chickpea (*Cicer arietinum L.*)



Functionalities

- Enhances antibacterial activity against bacterial blight in rice
- Provides antifungal protection against Rhizoctonia solani and chickpea wilt
- Supports sustainable crop protection using eco-friendly nanocomposites
- Enables targeted application through validated doses for multi-location trials

Key Features

Green Synthesis – Eco-friendly production of CuNPs and AgNPs

Broad-Spectrum – Effective against bacterial and fungal pathogens

Validated Efficacy – Proven in net house trials and in silico studies

Implementation Overview

No	6	10
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Indian Institute of Agricultural Biotechnology(IIAB), Ranchi, Garkhantaga, Jharkhand, 834003

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Visible light insect trap

Overview

The visible light insect trap uses specific colored light and background colors, combined with water, to attract and trap insects. Harmless to humans and animals, it is portable, flexible for field or storage use, and effective against beetles and moths, especially grain moths (Sitotroga).



Functionalities

- Attracts and traps insect pests using visible light and water
- Monitors pest infestation for informed pest management decisions
- Provides a safe, non-toxic alternative to UV traps
- Portable and adaptable for both field and storage installation

Key Features

Human-Safe – Harmless to humans and animals

Broad-Spectrum – Effective against beetles and moths, including grain moth

Portable Design – Flexible installation in fields and storage structures

Implementation Overview

Yes	8	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute of Post-Harvest Engineering and Technology, Ludhiana, Punjab, 141004

Sector: **Farm**

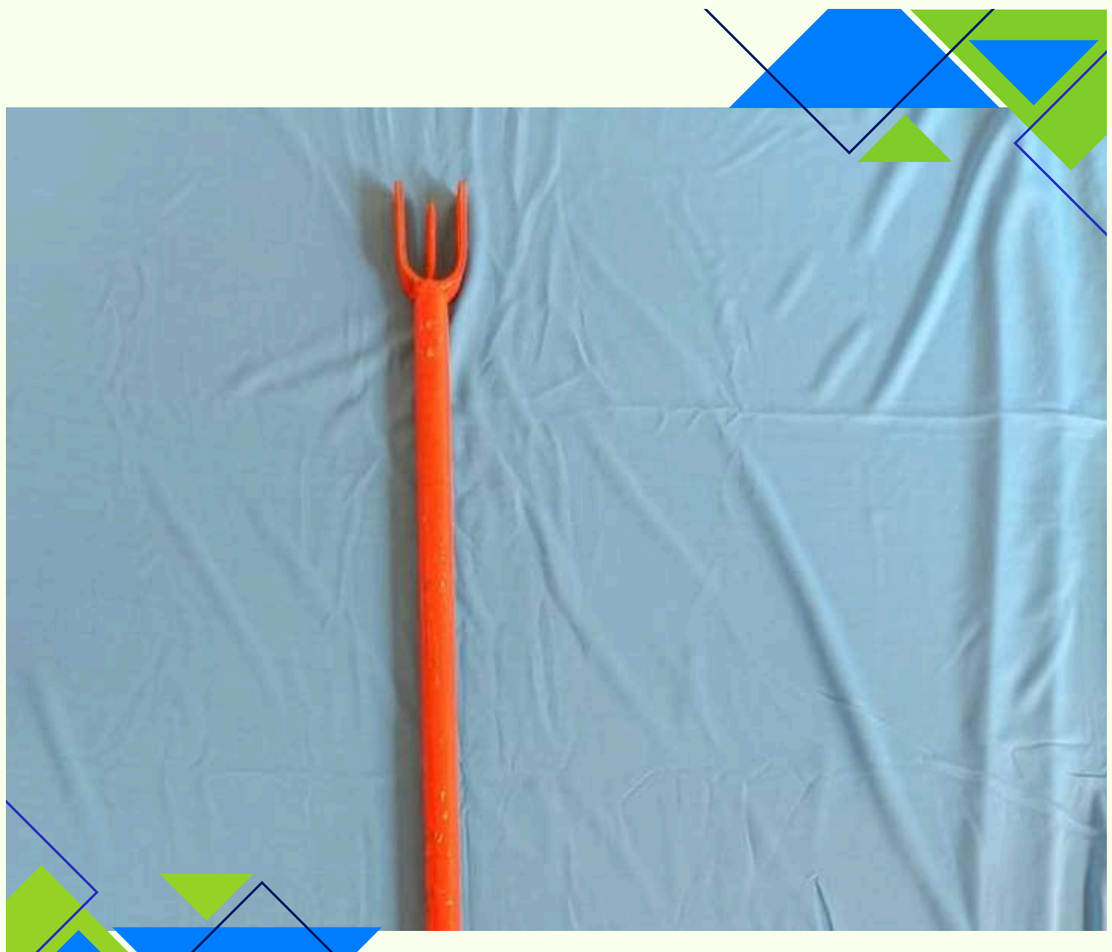
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Oil palm ablation tool

Overview

The Oil Palm Ablation Tool, patented by ICAR–IIOPR, enables efficient removal of juvenile inflorescences (1–3 years) to enhance vegetative growth and drought resistance. Designed with a 5-ft GI pipe and a U-shaped holder with a central nail, it allows safe, quick, and ergonomic operation without damaging leaves.



Functionalities

- Enhances nutrient retention and palm growth
- Improves drought resistance in young palms
- Enables quick, low-drudgery operation in the field
- Enables precise and efficient removal of unopened inflorescences

Key Features

Patented Innovation – Ensures proprietary design protection

High Efficiency – Removes 125 inflorescences per hour

Lightweight Design – Easy handling and field portability

Implementation Overview

Yes	9	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Indian Institute of Oil Palm Research, Eluru Dt., Andhra Pradesh, 534435

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Cordyceps militaris Commercial Cultivation Technology for Medicinal Mushroom Production

Overview

ICAR has developed a standardized cultivation technology for *Cordyceps militaris* to enable commercial-scale production under controlled laboratory conditions. Using brown rice as the basal substrate with optimized nutrient composition, temperature, humidity, and light regimes, the technology ensures consistent fruiting within 35–40 days, yielding 12–14 g of high-value medicinal mushrooms per 500 ml jar.



Functionalities

- Enables artificial cultivation of Cordyceps militaris in laboratory conditions
- Ensures consistent production using rice-based substrate and nutrient solution
- Facilitates harvest of mushrooms for sale as fresh or sun-dried produce
- Enables dual marketing as fresh or dried

Key Features

Controlled Cultivation – Temperature and humidity optimized

Compact Setup – Grows efficiently in small lab spaces

Commercial Potential – Scalable for local or export markets

Implementation Overview

Yes	9	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR- Directorate of Mushroom Research,
Chambaghat,
Solan, HP, 173213

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Arundo donax Erosion-Control Mats for Soil Conservation and Cropping Intensification

Overview

Conservation tillage using *Arundo donax* erosion-controlling mats mitigates soil degradation on sloping rainfed arable lands in the north-western Himalaya. By conserving rainwater (1121–1265 mm), the technology improves soil moisture, enabling catch crops like garden pea between maize and wheat without affecting wheat yield, thereby enhancing productivity and income.



Functionalities

- Conserves rainwater in the soil profile for supplemental cropping
- Reduces soil erosion on steep sloping lands
- Enhances soil moisture retention and fertility
- Supports intercropping of catch crops without yield penalty

Key Features

Soil Conservation – *Arundo donax* mats prevent erosion and retain soil structure on slopes

Water Storage – Captures 1121–1265 mm of rainfall for supplemental crop irrigation

Income Enhancement – Supports catch crops to boost income

Implementation Overview

No	6	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Indian Institute of Soil and Water Conservation, Dehradun, Uttarakhand, 248195

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Sand-Based Runoff Filter Technology for Groundwater Recharge in Semi-Arid Regions

Overview

This Sand-based runoff filter system captures and treats agricultural runoff in semi-arid regions, enabling artificial groundwater recharge via dug wells or bore wells. This technology enhances groundwater availability for Rabi crops, reduces maintenance costs fivefold, and triples sediment trap efficiency and filter lifespan.



Functionalities

- Harvests runoff from crop fields for groundwater recharge
- Improves irrigation water availability in semi-arid and rainfed areas
- Reduces maintenance costs with longer-lasting filters
- Integrates easily into watershed development programs

Key Features

Efficient Filtration – Tripled sediment trap efficiency improves water quality

Cost-effective – Maintenance cost five times lower than standard filters

Sustainable Water Use – Enhances groundwater availability for irrigation and ecosystem support

Implementation Overview

Yes	6	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Indian Institute of Soil and Water Conservation, Research Centre-Vasad, Gujarat, 388306

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Sapota (*Achras zapota*)-Based Bio-Engineering System for Ravine Slope Stabilization in Semi-Arid Gujarat

Overview

This sapota-based bio-engineering technology combines vegetative and engineering measures to conserve natural resources and enhance productivity on degraded ravine slopes in Western India. It supports climate change mitigation and adaptation while rehabilitating marginally productive land, offering significant environmental and societal benefits.



Functionalities

- Stabilises ravine slopes and controls soil erosion
- Enhances land productivity using vegetative and engineering measures
- Improves water retention, soil health, and climate resilience
- Offers a scalable solution for marginal and degraded lands

Key Features

Integrated Approach – Combines vegetative and engineering measures

Slope Rehabilitation – Trenching and terracing improve soil stability and productivity

Climate Resilient – Supports adaptation and mitigation in degraded ravine ecosystems

Implementation Overview

No	6	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Indian Institute of Soil and Water Conservation, Research Center-Vasad, Gujarat, 388306

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Grass Filter Strip Technology for Soil and Water Conservation in Semi-Arid Marginal Lands

Overview

Grass filter strips integrated along field bunds slow runoff, trap sediments, and reduce losses of soil, nutrients, and organic carbon in semi-arid croplands. By enhancing in-situ moisture retention and improving soil fertility, these perennial grass strips boost overall productivity while providing additional fodder, making them ideal for resource-poor, rainfed farming systems.



Functionalities

- Conserves rainwater and reduces runoff in croplands
- Minimises nutrient and organic carbon losses through sediment deposition
- Enhances forage production and system productivity with perennial grasses
- Improves soil fertility, crop yields, and supports sustainable rainfed farming

Key Features

Resource-Conserving – Reduces runoff and enhances in-situ rainwater retention

Fertility-Enhancing – Traps nutrients and sediments to improve soil

Forage-Producing – Integrates perennial grasses for additional fodder and productivity gains

Implementation Overview

No	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Indian Institute of Soil and Water Conservation, Research Center-Vasad, Gujarat, 388306

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Bamboo based conservation technology for the rehabilitation of degraded lands

Overview

This technology rehabilitates degraded lands by integrating fast-growing bamboo species with conservation trenches. Bamboo biomass yields 12–30 t/ha/year and sequesters 5.83–14.88 t C/ha/year, while reducing soil loss from 22 to 4.5 t/ha/year and conserving 45% soil moisture. Ecosystem services are enhanced 2–2.5 times, providing both environmental and economic benefits.



Functionalities

- Restores degraded lands via bamboo plantations and conservation trenches
- Sequesters carbon and controls soil erosion
- Enhances soil moisture, ecosystem services, and biodiversity
- Produces biomass for economic returns and promotes environmental sustainability

Key Features

High-Biomass Production – Generates 12–30 t/ha/year

Soil-Conserving – Reduces soil loss from 22 to 4.5 t/ha/year

Economically Viable – Offers B:C ratio of 2.19–3.18 with a 6-year payback period

Implementation Overview

Yes	6	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Indian Institute of Soil and Water Conservation, Dehradun, Uttarakhand, 248195

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Low cost ready to fruit bag developed in ICAR-DMR (Ghar-Ghar mushroom)

Overview

The low-cost Ready-to-Fruit (RTF) mushroom bag, developed at ICAR-DMR under the Ghar-Ghar Mushroom initiative, provides an easy and affordable method for mushroom cultivation. With a production cost of only ₹30–40 per bag, each unit yields about 600–800 g of mushrooms, making it highly profitable and suitable for household-level mushroom farming. The cultivation technique is simple, similar to oyster mushroom production, involving substrate wetting and pasteurisation before bag preparation.



Functionalities

- Provides a low-cost, ready-to-use mushroom cultivation unit
- Produces 600–800 g of mushrooms per bag with minimal input
- Simple cultivation process, easily adoptable at the household or small farm level
- Promotes mushroom cultivation as a nutritional and livelihood option

Key Features

Affordable Production – Costs only ₹30–40 per bag, ideal for small-scale growers

Good Yield – Produces 600–800 g of mushrooms per unit

User-Friendly – Technique similar to oyster mushroom cultivation, easily adopted at the household level

Implementation Overview

Yes	9	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR- Directorate of Mushroom Research,
Chambaghat,
Solan, HP, 173213

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

IMH 224: Medium-Maturity Maize Hybrid for Eastern India with Insect and Disease Resistance

Overview

IMH 224 is a medium-maturing (85–90 days) field corn hybrid developed for the Kharif season, yielding 7.23 t/ha. Recommended for Eastern Uttar Pradesh, Bihar, Jharkhand, Odisha, and West Bengal, it features conico-cylindrical ears with semi-dent orange kernels. The hybrid is moderately resistant to major insect pests and shows moderate resistance to few blight. Field-level demonstrations have confirmed its performance and adaptability.



Functionalities

- Enhances maize yield under Kharif season conditions
- Protects against major insect pests and fungal diseases
- Improves ear and kernel quality for better market value
- Adaptable to Eastern and Northeastern agro-climatic zones

Key Features

High Yield Potential – Produces up to 7.23 t/ha under recommended conditions

Pest and Disease Resistant – Tolerant to major insects and stalk diseases

Quality Grain – Conico-cylindrical ears with semi-dent orange kernels suitable for consumption and market

Implementation Overview

Yes	6	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Indian Institute of Maize Research, Village Chahar, Near Food Park & Toll Plaza, Ladhowal, Ludhiana, Punjab, 141008

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

DMRH 1308: High-Yielding Rabi Maize Hybrid for Multi-State Cultivation

Overview

DMRH 1308 is a medium-maturity, high-yielding Rabi maize hybrid notified for Bihar, Rajasthan, Gujarat, Chhattisgarh, and Madhya Pradesh. Producing 9.5–10.5 t/ha, it features attractive yellow grains, strong input responsiveness, and tolerance to Turcicum leaf blight and charcoal rot, making it ideal for intensive production systems.



Functionalities

- Produces high yield of 9.5–10.5 t/ha with attractive yellow grains
- Matures in medium duration (130–150 days), suitable for Rabi season
- Shows tolerance to Turcicum leaf blight and charcoal rot diseases
- Responds well to high input cultivation for enhanced productivity

Key Features

Mid-duration variety – 130–150 days Rabi maize suitable for diverse conditions

High-yielding and attractive grains – Yellow grain with a productive female line

Disease tolerance – Resistant to Turcicum leaf blight and charcoal rot

Implementation Overview

10	6	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Indian Institute of Maize Research, Village Chahar, Near Food Park & Toll Plaza, Ladhowal, Ludhiana, Punjab, 141008

Sector: **Farm**

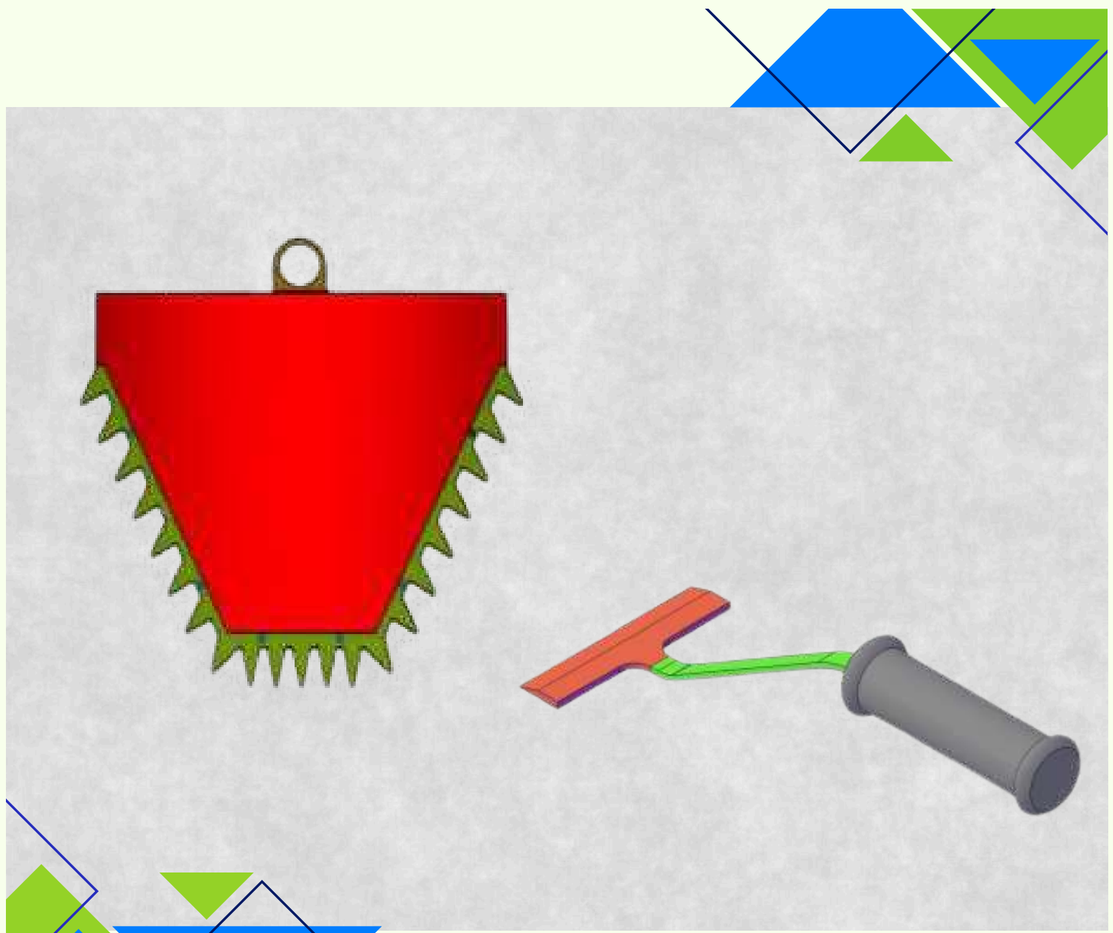
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Lightweight Ergonomic Hand Tools for Efficient Intercultural Operations

Overview

ICAR-CPRI has developed a set of five lightweight, ergonomic hand tools—serrated weeders, spade, T-shaped hoe, L-shaped hoe, and blade weeder—to improve efficiency in intercultural operations. Designed to reduce drudgery, enhance precision, and increase worker productivity, these tools offer a cost-effective and user-friendly alternative to heavy conventional implements.



Functionalities

- Facilitates efficient intercultural operations in crop production
- Offers lightweight, user-friendly, and cost-effective designs
- Includes specialised tools like serrated weeders, spade, T- and L-shaped hand hoes, and blade weeder
- Reduces worker fatigue and improves overall field productivity

Key Features

Serrated Weeder – Lightweight and serrated edges for effective weed removal

T- & L-Shaped Hoes – Ergonomic tools for efficient weeding

Blade Weeder & Spade – Durable, user-friendly, and cost-effective for multiple intercultural tasks

Implementation Overview

No	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR Central Potato Research Institute Shimla, Himachal Pradesh, 171001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Short duration Shiitake cultivation technology

Overview

The short-duration mushroom cultivation technology reduces the first harvest period from 90–100 days to just 45–47 days, ensuring faster production cycles and improved efficiency. With a biological efficiency (BE) of 110–130%, the technology uses an optimised substrate mix and controlled environmental conditions to achieve higher yields, providing farmers with a cost-effective and sustainable mushroom production method.



Functionalities

- Cuts harvest time nearly in half
- Increases productivity with high BE (110–130%)
- Ensures uniform fruiting under a controlled environment
- Delivers consistent yield per substrate bag

Key Features

Rapid Harvest Cycle – First harvest achieved in 45–47 days compared to 90–100 days

High Biological Efficiency – Attains 110–130% BE with optimised substrate mix

Enhanced Yield – Produces 500–600 g of fresh mushrooms from 1.5 kg dry substrate

Implementation Overview

Yes	9	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR- Directorate of Mushroom Research, Solan, Himachal Pradesh, 173213

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Circular Agriculture Model for Climate-Resilient Hill Farming

Overview

ICAR-IISWC's circular agriculture model integrates white button mushroom cultivation with the recycling of spent mushroom substrate (SMS) as organic manure for hill vegetable farming. This zero-waste system improves soil fertility, increases crop yields, and reduces carbon emissions. It enhances climate resilience, supports sustainable livelihoods, and provides a scalable model for hill ecosystems.



Functionalities

- Promotes commercial mushroom production and nutrient recycling
- Ensures higher vegetable crop productivity with organic SMS
- Supports climate-resilient and sustainable hill agriculture
- Enhances adoption through technical and post-commercialisation support

Key Features

Innovative – Integrates mushroom cultivation with circular agriculture

Sustainable – Reduces carbon footprint and emissions

Supported – Provides technical collaboration and guidance for scaling

Implementation Overview

Yes	6	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR- Indian Institute of Soil and Water Conservation, Research Centre, Udhagamandalam, Ooty, Tamil Nadu, 643004

Sector: **Farm**

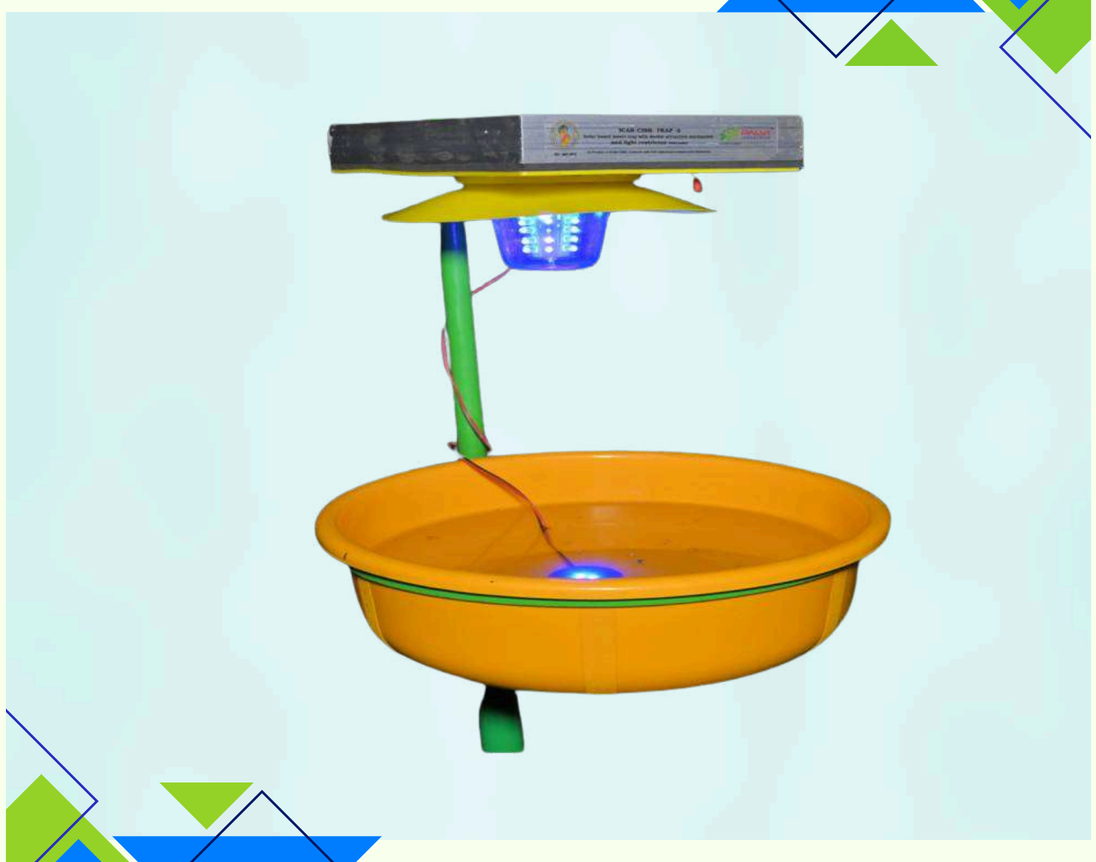
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CISH TRAP-2: Solar Insect Trap with Dual Attraction System

Overview

CISH TRAP-2 is a solar-powered insect trap with a double attraction mechanism using violet, blue, and additional LEDs. It features automated illumination cycles, a ray restrictor, and on/off LED automation to reduce vacuum cleaning effects, effectively controlling flying insects in multiple crops, including vegetables, mango, pomegranate, cotton, sugarcane, pulses, and rice.



Functionalities

- Promotes efficient insect attraction and trapping
- Ensures reduced vacuum cleaning and insect escape
- Supports multi-crop application across fruits, vegetables, and pulses
- Enhances automation with cyclic LED illumination

Key Features

Innovative – Uses solar power and a multi-LED attraction mechanism

Versatile – Effective in various crops and environments

Supported – Automated illumination and ray restrictor for efficiency

Implementation Overview

Yes	9	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute for Subtropical Horticulture, Rehmankhera, P. O. Kakori, Lucknow, Uttar Pradesh, 226101

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CISH TRAP-1: Automated Colour-Changing Solar Insect Trap

Overview

CISH TRAP-1 is a solar-powered automated insect trap with color-changing CFLs (violet and black), electrified mesh, collection bucket, sensors, and control board. Automated illumination and ray restrictor reduce vacuum cleaning effects, making it effective for vegetables, mango, pomegranate, cotton, sugarcane, pulses, rice, and other multi-crop environments.



Functionalities

- Promotes efficient insect attraction using dual CFLs
- Ensures reduced vacuum cleaning and insect escape
- Supports multi-crop application across fruits, vegetables, and pulses
- Enhances automation with sensors and cyclic illumination

Key Features

Innovative – Solar-powered, colour-changing CFL with restrictor

Versatile – Effective in multiple crops and environments

Supported – Equipped with sensors and an automated control system

Implementation Overview

Yes	9	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute for Subtropical Horticulture, Rehmankhera, P. O. Kakori, Lucknow, Uttar Pradesh, 226101

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CISH VMAT– Rain-proof long lasting fruit fly traps technology for Vegetables

Overview

CISH VMAT is a durable, rain-proof fruit fly trapping technology designed for cucurbit vegetable crops. It features a lure-impregnated wooden killing block (4.5 × 4.5 × 1.2 cm) housed in a 1100 ml protective container, providing 60–90 days of continuous effectiveness. The trap reduces fruit fly incidence, minimizes pesticide use, and enhances crop quality and yield.



Functionalities

- Promotes effective fruit fly trapping in cucurbit crops
- Ensures long-lasting activity up to 90 days
- Supports rain-proof and durable trap operation
- Enhances pest management in vegetables efficiently

Key Features

Innovative – Wooden killing block with lure mixture

Durable – Rain-proof and long-lasting design

Supported – Effective across multiple cucurbit crops

Implementation Overview

Yes	9	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute for Subtropical Horticulture, Rehmankhera, P. O. Kakori, Lucknow, Uttar Pradesh, 226101

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CISH OMAT– Rain-proof long lasting fruit fly traps technology for orchards

Overview

CISH OMAT is a rain-proof, long-lasting fruit fly trap with a 4.5 × 4.5 × 1.2 cm wooden killing block impregnated with lure and killing mixture in a 1100 ml water-proof container. Effective for 60–90 days, it targets fruit flies in crops like mango, guava, sapota, citrus, and papaya. The technology reduces fruit fly damage, lowers pesticide use, and improves fruit yield and market quality.



Functionalities

- Promotes effective fruit fly trapping in fruit crops
- Ensures long-lasting activity up to 90 days
- Supports rain-proof and durable trap operation
- Enhances pest management with technical guidance

Key Features

Innovative – Wooden killing block with lure mixture

Durable – Rain-proof and long-lasting design

Supported – Guidance for effective use in multiple fruit crops

Implementation Overview

Yes	9	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute for Subtropical Horticulture, Rehmankhera, P. O. Kakori, Lucknow, Uttar Pradesh, 226101

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

HortiPlus: Microbial Consortium Organic Manure for Vegetable Farming

Overview

Hortiplus, developed by ICAR-IARI, is a microbial consortium-based organic manure designed for vegetable crop cultivation. It enriches soil with beneficial microbes, enhances nutrient cycling, and promotes sustainable agriculture by converting agricultural biomass into high-quality compost, reducing dependency on chemical fertilizers while improving soil health and crop productivity.



Functionalities

- Enhances soil fertility and microbial balance
- Converts farm biomass into quality compost
- Boosts nutrient uptake and crop yield
- Reduces reliance on synthetic fertilizers

Key Features

Microbial-Enriched Formula – Infused with beneficial microbial consortia

Eco-Friendly Solution – Promotes sustainable and organic cultivation

Yield-Enhancing Effect – Improves crop growth and nutrient availability

Implementation Overview

Yes	9	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute of Brackishwater Aquaculture, 75, Santhome High Road, MRC Nagar, Chennai, Tamil Nadu, 600028

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CISH Glue Trap: Long-Lasting Sticky Trap for Winged Insect Management

Overview

The CISH Glue Trap is a multilayered, water-resistant sticky trap designed for effective monitoring and control of winged insects in diverse crops. Made of foldable blue/yellow sheets coated with white oil–based glue, it allows sequential use of layers, offering month-long field effectiveness without the need for frequent replacement.



Functionalities

- Promotes effective control of winged insects
- Ensures long-lasting sticky action up to a month
- Supports sequential use with foldable sheets
- Enhances pest management in multiple crops

Key Features

Innovative – Foldable multilayered glue sheets

Durable – Water-resistant and long-lasting design

Versatile – Effective across many crop types

Implementation Overview

Yes	9	4
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute for Subtropical Horticulture, Lucknow, Uttar Pradesh, 226101

Sector: **Farm**

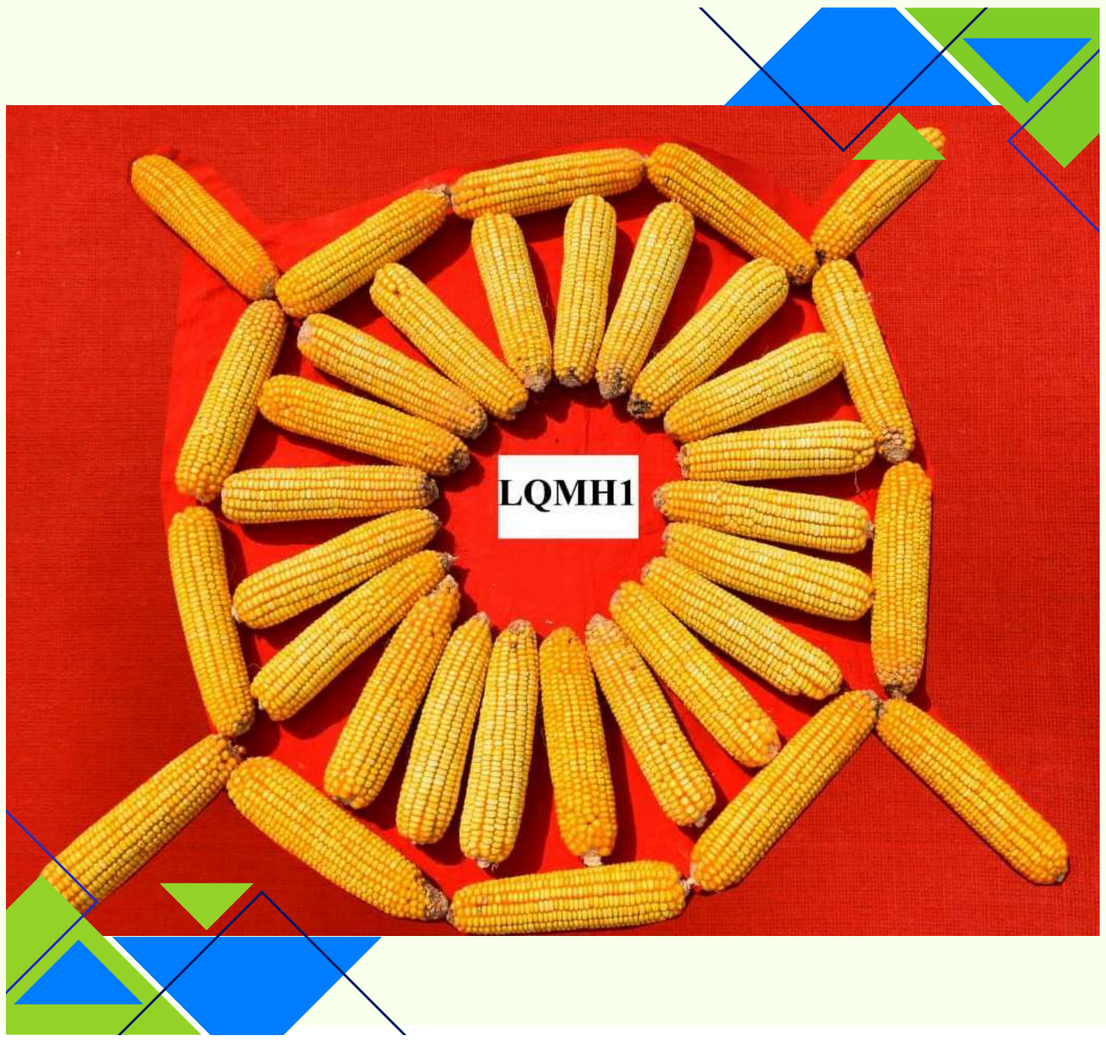
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

LQMH 1: Early-Maturing Quality Protein Maize Hybrid for Hill Regions

Overview

This early-maturing single-cross maize hybrid (100 days in Northern Hill Zone (NHZ); 80–85 days other regions) yields 7.5–8.0 t/ha and is recommended for the NHZ (Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Meghalaya, Sikkim, Assam, Tripura, Nagaland, Manipur, Arunachal Pradesh). Demonstrations confirmed its superior performance and nutritional quality in challenging hill agro-ecosystems.



Functionalities

- Promotes early maturity and rapid crop cycle
- Ensures high yield with 22.4% superiority over best check
- Supports enhanced nutritional quality with high Tryptophan and Lysine
- Enhances adaptability in Northern Hill Zone conditions

Key Features

High-yielding – Outperforms local maize varieties

Nutritious – Rich in Tryptophan (0.75–0.80%) and Lysine (3.0–3.5%)

Proven – Demonstrated successfully in field-level trials

Implementation Overview

Yes	6	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Indian Institute of Maize Research, Ludhiana, Village Chahar, Near Food Park & Toll Plaza, Ladhowal, Punjab, 141008

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

IQMH 203: High-Yield Quality Protein Maize Hybrid for Central–Western India

Overview

IQMH 203 is a medium-maturity single cross maize hybrid (89 days, 6.3 t/ha) recommended for the Central Western Zone (Rajasthan, Madhya Pradesh, Chhattisgarh, Gujarat). It demonstrated yield superiority of 28–36% over best checks, with high Tryptophan (0.77%) and Lysine (3.48%). Field demonstrations confirmed its performance.



Functionalities

- Promotes medium-duration crop maturity for efficient production
- Ensures superior yields compared to existing maize checks
- Supports enhanced nutritional value with high Tryptophan and Lysine
- Enhances farmer confidence through proven field demonstrations

Key Features

High-yielding – 6.3 t/ha with up to 36% superiority

Nutritious – Rich in quality protein with elevated amino acids

Proven – Validated through multi-year AICRP trials and demonstrations

Implementation Overview

Yes	6	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Indian Institute of Maize Research, Ludhiana, Punjab, 141008

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

ICAR-FUSICONT: Biofungicide Solution for Managing Banana Fusarium Wilt TR4

Overview

ICAR-FUSICONT is an innovative biofungicide using *Trichoderma reesei* on a patented medium for managing banana Fusarium wilt TR4. Registered under CIBRC 9(3b), it was commercialised for Rs. 45 lakhs and has been successfully applied on 1,220 ha, including 345 ha of hotspots in Bihar and Uttar Pradesh.



Functionalities

- Promotes effective management of Fusarium wilt TR4 in banana
- Ensures wider adoption with successful commercialisation
- Supports disease control in hotspot regions
- Enhances sustainable crop protection through biofungicide use

Key Features

Innovative – Developed with Trichoderma reesei on patent-protected media

Commercialised – Licensed for Rs. 45 lakhs to two firms

Proven – Successfully applied across 1,220 ha including hotspots

Implementation Overview

Yes	9	4
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute for Subtropical Horticulture, Lucknow, Uttar Pradesh, 226101

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

DBW 303 (Karan Vaishnavi): High-Yield Wheat for Early Sown Irrigated Systems

Overview

A high-yielding wheat variety released for irrigated early-sown, high-fertility conditions of the North Western Plains Zone. It matures in 156 days, yields 81.2 q/ha (potential 97.4 q/ha), has 12.1% protein, 42 g thousand grain weight, and shows resistance to leaf rust, stripe rust, and wheat blast. Seed and production support are provided under MoA terms.



Functionalities

- Promotes high and stable wheat yields under early-sown conditions
- Ensures disease resistance against rusts and wheat blast
- Supports nutritional quality with 12.1% protein content
- Enhances seed accessibility with guided production support

Key Features

High-yielding – 81.2 q/ha average, 97.4 q/ha potential yield

Resistant – Tolerant to major wheat diseases

Supported – Licensed seed supply and production guidance

Implementation Overview

235
Deployed

9
Technology Readiness Level (TRL)

7
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR- Indian Institute of Wheat and Barley Research, Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Pre-Harvest Fruit Bagging Technology for High-Quality Mango Production

Overview

Pre-harvest fruit bagging in mango using brown paper enhances fruit quality with improved colour, firmness (0.98 N), TSS (21.4 °Brix), and TSS/acid ratio (67.0). Widely adopted in Mallihabad, this technology has resulted in large-scale use—over 3 crore bags in Uttar Pradesh enhancing fruit quality and farmer income by up to ₹30/kg.



Functionalities

- Promotes uniform colour, firmness, and sweetness in mangoes
- Ensures higher market value and farmer income
- Supports large-scale adoption across mango-growing regions
- Enhances fruit quality with eco-friendly bagging practice

Key Features

Effective – Improves TSS, firmness, and overall fruit quality

Profitable – Adds Rs. 30/kg to farmer income

Proven – Adopted on large scale in Mallihabad and UP

Implementation Overview

No	8	4
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute for Subtropical Horticulture, Lucknow, Uttar Pradesh, 226101

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Espalier Training System for High-Density, High-Quality Guava Production

Overview

The espalier system allows 8–10 times more guava trees per hectare than traditional planting, significantly improving light interception, photosynthesis, fruit quality, and yield. Tested with Shweta and Lalit varieties, it delivers 20–35 t/ha and doubles Grade ‘A’ fruit proportion. The system is approved by VTIC and demonstrated across multiple districts.



Functionalities

- Promotes higher planting density and productivity in guava
- Ensures improved fruit quality with higher grade ‘A’ proportion
- Supports enhanced light availability and photosynthetic efficiency
- Enhances farmer adoption through successful demonstrations

Key Features

Efficient – 8–10 times higher planting density than traditional systems

Productive – Yields up to 35 t/ha with better fruit quality

Approved – Recognised technology validated by VTIC

Implementation Overview

No	8	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute for Subtropical Horticulture, Lucknow, Uttar Pradesh, 226101

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Refined Rejuvenation Technology for Productivity Enhancement in Old Mango Orchards

Overview

The refined rejuvenation technology revitalizes old, unproductive mango orchards, transforming yields from 4–5 t/ha to 10–12 t/ha. Standardized and widely implemented through SHM, NHM, and NHB, it improves fruit size, quality, and canopy structure. Adopted across ~11,600 ha in multiple states, it benefits over 15,000 farmers.



Functionalities

- Promotes enhanced mango yield, size, and quality
- Ensures large-scale adoption across major mango-growing states
- Supports farmer engagement through NHM, SHM, and NHB efforts
- Enhances farmer skills with capacity-building programs

Key Features

Productive – Doubles mango yields to 10–12 t/ha

Scalable – Adopted by 15,000 farmers across three states

Supported – Implemented with government-backed initiatives and training

Implementation Overview

No	9	4
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute for Subtropical Horticulture, Lucknow, Uttar Pradesh, 226101

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CISH Ambika: High-Value Dwarf Mango Variety for Domestic and Export Markets

Overview

A mango variety developed from Amrapali × Janardan Pasand, producing attractive yellow fruits with red blush, firm and fibre-scarce flesh. Known for heavy bearing, high nutraceutical value, and strong domestic and export potential, it generates additional income of about ₹70,000/ha.



Functionalities

- Promotes higher farmer income through premium pricing
- Ensures regular and heavy fruit bearing in dwarf trees
- Supports domestic and export market potential
- Enhances nutritional value with mangiferin and luepeol

Key Features

High yielding – About 80 kg fruit per tree

Superior quality – 250 g fruits with 21°Brix TSS

Profitable – Additional income of ₹70,000/ha

Implementation Overview

Yes	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute for Subtropical Horticulture, Lucknow, Uttar Pradesh, 226101

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Nethra Jumbo-2: High-Yield Jumbo Cashew Hybrid with Uniform Nut Size

Overview

Nethra Jumbo-2 (H-125) is a high-performing jumbo cashew hybrid featuring precocious and cluster bearing, exceptional nut uniformity (>80%), and superior yield. It produces bold 10–12 g nuts with 29.3% shelling percentage and 23.77% CNSL. The orange-red apples weigh ~102 g with 72% juice and 11°Brix.



Functionalities

- Delivers high yields through precocious and cluster-bearing traits
- Provides uniform jumbo nuts ideal for premium kernel grades (W130)
- Supports value addition through high-quality cashew apples and CNSL content
- Enhances farmer profitability through superior nut weight and shelling recovery

Key Features

Premium – Large (250 g), firm fruits with minimal fiber and 21°Brix sweetness

High Productivity – Dwarf, regular-bearing trees yielding ~80 kg per plant

Enhanced Profitability – Generates ~₹70,000/ha additional income due to strong market and export demand

Implementation Overview

No	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Directorate of Cashew Research, Darbe (P.O), Puttur, Karnataka, 574202

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Nethra Ubhaya: a dual purpose cashew variety

Overview

Nethra Ubhaya is an early-fruiting cashew variety (Jan–March) with moderate nut size, large cashew apples, high kernel and juice recovery, low tannin, and easy testa peeling. It is well-suited for both nut and apple-based product markets, supported with technical guidance.



Functionalities

- Enables early-season cashew production (Jan–March)
- Provides high-quality kernels and juice recovery
- Supports nut and cashew apple value addition
- Backed by institutional technical support

Key Features

Efficient – Shelling percentage 34.66% with W 210 grade kernels

High recovery – 29.51% kernel and 75.6% juice yield

Consumer-friendly – Easy testa peeling, low tannin (3.43 mg/100g)

Implementation Overview

No	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Directorate of Cashew Research, Darbe (P.O), Puttur, Karnataka, 574202

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

CISH-Bioenhancer: Indigenous Microbial Consortium for Nutrient-Rich, Low-Input Farming

Overview

CISH-Bioenhancer is an indigenous microbial consortium developed from natural farming inputs like panchgavya, beejamrita, amritpani, and vermiwash. Rich in nutrient-solubilizing and plant-growth-promoting bacteria, it significantly enhances crop productivity while reducing chemical fertilizer use by 30%. Effective across vegetables, medicinal plants, and cereals, it supports sustainable, low-input agriculture.



Functionalities

- Promotes nutrient solubilization and plant growth
- Ensures cost reduction in fertiliser use
- Supports higher yields across multiple crops
- Enhances eco-friendly and sustainable farming practices

Key Features

Natural – Derived from panchgavya, amritpani, vermiwash, etc.

Efficient – 30% reduction in fertiliser cost

Versatile – Effective in cereals, vegetables, and herbs

Implementation Overview

Yes	9	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute for Subtropical Horticulture, Lucknow, Uttar Pradesh, 226101

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Nethra Vaaman: a new dwarf Cashew variety

Overview

Nethra Vaaman is the first dwarf cashew variety released by ICAR-DCR, Puttur. With a height of ~2.5 m and a 6 m canopy at 10 years, it exhibits slow growth, precocious and prolonged bearing. It is suitable for high-density and homestead cultivation, offering moderate yields with minimal pruning requirements.



Functionalities

- Promotes high and ultra-high-density planting systems
- Ensures a prolonged bearing period of 4–5 months
- Supports homestead cultivation with minimal care
- Enhances cashew productivity with dwarf trees

Key Features

Compact – 2.5 m height, 6 m spread in 10 years

Productive – Precocious, moderate and prolonged bearing

Manageable – Requires minimal pruning and trimming

Implementation Overview

No	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Directorate of Cashew Research, Darbe (P.O), Puttur, Karnataka, 574202

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Nethra Jumbo-1 (H-126): a new jumbo Cashew hybrid

Overview

H-126 is a high-yielding jumbo nut cashew hybrid with nut weight ≥12 g, shelling percentage 29.1%, and kernel weight 3.4 g (grade >W180). The cashew apples weigh 102 g with 72% juice and 13°Brix TSS. It offers higher market value and labour savings. Technical support is available from the directorate.



Functionalities

- Promotes high yield with jumbo cashew nuts
- Ensures better market price through larger nut size
- Supports efficient harvesting with labour savings
- Enhances juice production and TSS in cashew apples

Key Features

Superior – Jumbo nuts ≥12 g with kernel grade >W180

Productive – High shelling percentage (29.1%) and kernel weight (3.4 g)

Profitable – Offers ~15% higher price to farmers

Implementation Overview

8000	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Directorate of Cashew Research, Darbe (P.O), Puttur, Karnataka, 574202

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Soilless Cocopeat Medium for Disease-Free Potato Seed Production

Overview

Treated cocopeat has been developed as a soilless medium for potato seed production, free from quarantined pests, nematodes, and soil-borne diseases. It is suitable for use in plateaus, hills, and plains (except Indo-Gangetic plains) and ensures safe, high-quality seed production. Technical guidance is available on request.



Functionalities

- Promotes safe potato seed production in pest- and disease-prone soils
- Ensures quarantined pest and nematode-free growing media
- Supports high-quality and healthy tuber development
- Enhances adoption of soilless cultivation systems

Key Features

Safe – Free from soil-borne diseases and quarantined pests

Effective – Suitable for diverse terrains outside Indo-Gangetic plains

Supported – Technical know-how provided on request

Implementation Overview

Yes	6	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR Central Potato Research Institute, Shimla, Himachal Pradesh, 171001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Nethra Ganga (H-130): A new jumbo Cashew hybrid

Overview

H-130 is a high-yielding, bold nut cashew hybrid from ICAR-DCR, Puttur. Precocious and cluster-bearing, it produces nuts of 10–14 g and yellow cashew apples (75–120 g) with 29.5% shelling and W180 kernel grade. Suitable for high-density planting and responsive to pruning. Technical support available as needed.



Functionalities

- Promotes early and cluster-bearing cashew production
- Ensures bold nut development with high shelling percentage
- Supports high-density planting and pruning adaptability
- Enhances productivity and profitability of cashew orchards

Key Features

Superior – Bold nuts 10–14 g with W180 kernel grade

Productive – Big cashew apples (75–120 g) and cluster bearing

Manageable – Responds well to pruning, suitable for HDP

Implementation Overview

7000	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Directorate of Cashew Research, Darbe (P.O), Puttur, Karnataka, 574202

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

RhizoNBAIM: Liquid Rhizobial Biofertilizer for Legume Nitrogen Supply

Overview

RhizoNBAIM is a liquid rhizobial biofertilizer developed by ICAR–NBAIM to enhance nitrogen fixation in major legume crops. The effective strains in the formulation fix approximately 30 kg N/ha, reducing chemical nitrogen fertilizer use. It is especially beneficial for crops grown in soils lacking native rhizobia, offering reliable, year-long shelf stability.



Functionalities

- Promotes biological nitrogen fixation in legumes
- Ensures reduced dependence on chemical nitrogen fertilisers
- Supports higher yields in nitrogen-deficient soils
- Enhances adoption through training and technical guidance

Key Features

Efficient – Contributes ~30 kg N/ha for multiple legume crops

Versatile – Effective for soybean, French bean, pulses, and groundnut

Sustainable – One-year shelf life with training and upscaling support

Implementation Overview

No	6	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-National Bureau of Agriculturally Important Microorganisms, Kushmaur, Maunath Bhanjan, Uttar Pradesh, 275103

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Bio Sulphur: Liquid Sulphur-Oxidizing Biofertilizer for Enhanced Crop Yield and Oil Content

Overview

Bio Sulphur is a liquid formulation developed by ICAR-NBAIM containing *Alcaligenes sp.*, an S-oxidising bacterium. It converts elemental sulphur and reduced soil sulphur into plant-available forms, enabling complete replacement of gypsum. The formulation increases crop yield by 7%, oil content by 5%, and offers a one-year shelf life with technical training support.



Functionalities

- Promotes sulfur oxidation and nutrient availability in soils
- Ensures replacement of gypsum in crop nutrition
- Supports higher yield and oil content in crops
- Enhances efficiency with training and technical guidance

Key Features

Efficient – Converts elemental sulfur to plant-available forms

Productive – Increases yield by 7% and oil content by 5%

Supported – One-year shelf life with training and upscaling assistance

Implementation Overview

No	6	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-National Bureau of Agriculturally Important Microorganisms, Kushmaur, Maunath Bhanjan, Uttar Pradesh, 275103

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Biophos+: Liquid Phosphate-Solubilizing Biofertilizer for Enhanced Soil Phosphorus Availability

Overview

Biophos+ is a liquid PSB formulation developed by ICAR-NBAIM containing efficient phosphorus-solubilising bacteria. It augments 15–20 kg P_2O_5/ha, maintains soil biological activity, and supports soil health. The formulation has a one-year shelf life, is stable at elevated temperatures, and comes with training and upscaling support.



Functionalities

- Promotes phosphorus solubilization and nutrient availability
- Ensures maintenance of soil biological activity and health
- Supports higher crop productivity in diverse soils
- Enhances adoption through training and technical guidance

Key Features

Efficient – Provides 15–20 kg P_2O_5/ha through microbial action

Stable – One-year shelf life with tolerance to elevated temperatures

Supported – Training and upscaling assistance for licensees

Implementation Overview

Yes	6	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-National Bureau of Agriculturally Important Microorganisms, Kushmaur, Maunath Bhanjan, Uttar Pradesh, 275103

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

BioBacter: Liquid Azotobacter Biofertilizer for Universal Nitrogen Supplementation

Overview

BioBacter is a liquid formulation containing Azotobacter, a free-living nitrogen-fixing bacterium. It supplements 15–20 kg N/ha, produces IAA, and solubilizes some phosphorus. Suitable for all crops as a seed inoculant, it has a one-year shelf life, with training and upscaling support provided by ICAR-NBAIM.



Functionalities

- Promotes nitrogen fixation in all crop types
- Ensures production of IAA and partial phosphorus solubilization
- Supports higher crop productivity and soil fertility
- Enhances adoption through training and technical guidance

Key Features

Multipurpose – Nitrogen fixation, IAA production, partial P solubilization

Efficient – Adds 15–20 kg N/ha when applied as seed inoculant

Supported – One-year shelf life with training and upscaling assistance

Implementation Overview

No	6	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-National Bureau of Agriculturally Important Microorganisms, Kushmaur, Maunath Bhanjan, Uttar Pradesh, 275103

Sector: **Farm**

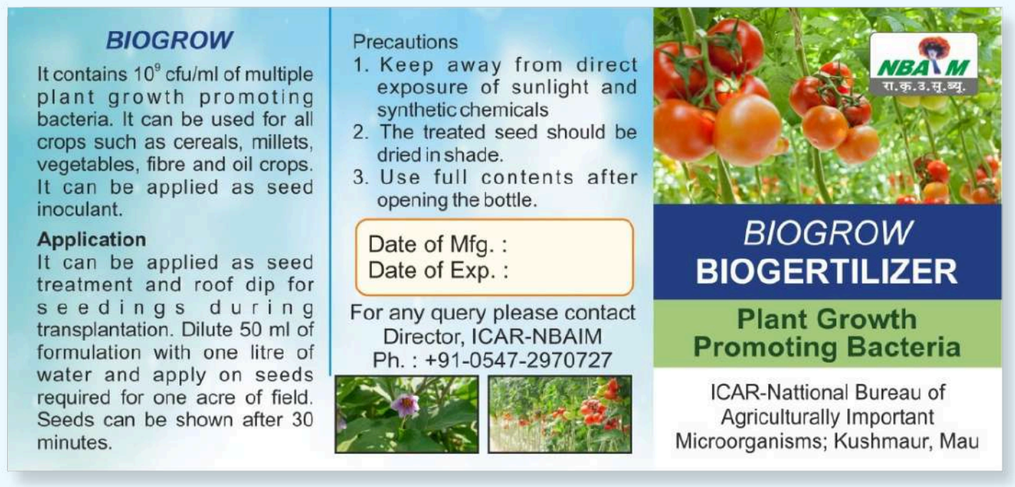
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

BioGrow: Liquid Consortium Biofertilizer for Enhanced Nutrient Uptake

Overview

BioGrow is a liquid formulation containing a bacterial consortium with phosphorus solubilization and siderophore production capabilities. Suitable for maize, tomato, and other solanaceous crops, it performs best in soils with pH 6.5–8.5, is easy to use, has a one-year shelf life, and comes with training and upscaling support.



Functionalities

- Promotes phosphorus availability and iron chelation in soils
- Ensures higher productivity in maize and solanaceous crops
- Supports crop growth in moderately alkaline soils
- Enhances adoption through training and technical guidance

Key Features

Efficient – P-solubilizing and siderophore-producing bacteria

Versatile – Suitable for maize, tomato, and other solanaceous crops

Supported – One-year shelf life with training and upscaling assistance

Implementation Overview

No	6	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-National Bureau of Agriculturally Important Microorganisms, Kushmaur, Maunath Bhanjan, Uttar Pradesh, 275103

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

BioZinc: Liquid Zinc-Solubilizing Biofertilizer for Soil and Crop Enrichment

Overview

BioZinc is a liquid formulation developed by ICAR-NBAIM containing efficient zinc-solubilising bacteria. It augments 2–5 kg Zn/ha, improves zinc uptake in crops, maintains soil biological activity, and fortifies grains with zinc. The formulation has a one-year shelf life, with training and upscaling support provided.



Functionalities

- Promotes zinc solubilization and availability in soils
- Ensures zinc fortification in crop grains
- Supports soil health and biological activity
- Enhances adoption through training and technical guidance

Key Features

Efficient – Augments 2–5 kg Zn/ha through microbial action

Versatile – Applicable across different soil types

Supported – One-year shelf life with training and upscaling assistance

Implementation Overview

No	6	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-National Bureau of Agriculturally Important Microorganism, Kushmaur, Maunath Bhanjan, Uttar Pradesh, 275103

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

ARC Technology: Low-Cost Apical Rooted Cutting System for Quality Potato Seed Production

Overview

Apical Removal Cutting (ARC) uses young, healthy apical tissue for high-quality potato seed production. By removing apical dominance to lower auxin (IAA), it enables multiple seasons of seed production on limited land, offering a cost-effective alternative to aeroponic technology.



Functionalities

- Promotes high-quality potato seed production
- Ensures rapid multiplication using seed plot technique
- Supports efficient use of limited land for multiple seasons
- Enhances productivity without high capital investment

Key Features

Efficient – High productivity per cutting from apical tissue

Cost-effective – Requires less investment than aeroponic methods

Innovative – Reduces IAA to stimulate multiple seed production cycles

Implementation Overview

8	6	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR Central Potato Research Institute, Shimla, Himachal Pradesh, 171001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Bio-NPK: Triple-Action Liquid Biofertilizer for N, P & K Enrichment

Overview

Bio NPK is a liquid formulation containing *Azotobacter chroococcum* (Nitrogen (N)-fixing), *Paenibacillus tylopili* (Phosphorus (P)-solubilising), and *Bacillus decolorationis* (Potassium (K)-solubilising). It augments 20–25 kg N, 15–20 kg P_2O_5, and 5–10 kg K/ha, suitable for cereals, millets, pulses, vegetables, and oil/fibre crops. Shelf life is one year with training and upscaling support.



Functionalities

- Promotes nitrogen, phosphorus, and potassium availability in soils
- Ensures enhanced nutrient uptake across multiple crop types
- Supports soil fertility and crop productivity
- Enhances adoption with training and technical guidance

Key Features

Efficient – Augments 20–25 kg N, 15–20 kg P_2O_5, 5–10 kg K/ha

Versatile – Applicable to cereals, millets, pulses, vegetables, and commercial crops

Stable – One-year shelf life with high CFU count

Implementation Overview

Yes	6	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR- National Bureau of Agriculturally Important Microorganisms, Kushmaur, Maunath Bhanjan, Uttar Pradesh, 275103

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Bio-Potash: Liquid K-Solubilizing Biofertilizer for High Nutrient Uptake

Overview

Bio Potash is a liquid formulation containing *Bacillus decolorationis*, a highly efficient K (Potassium)-solubilising bacterium. It augments 10–15 kg K/ha, helps crops utilise fixed soil potassium, and is suitable for maize and potatoes. The culture maintains a high CFU (Colony Forming Unit) count, has a one-year shelf life, with training and upscaling support are available.



Functionalities

- Promotes potassium solubilization and uptake in soils
- Ensures improved nutrient availability for maize and potato
- Supports higher crop productivity and soil fertility
- Enhances adoption through training and technical guidance

Key Features

Efficient – Augments 10–15 kg K/ha via microbial action

Versatile – Applicable to maize and potato in various soils

Stable – One-year shelf life with high CFU count

Implementation Overview

Yes	6	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR- National Bureau of Agriculturally Important Microorganisms, Kushmaur, Maunath Bhanjan, Uttar Pradesh, 275103

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

DBW 187 (Karan Vandana): High-Yield, Multi-Zone Wheat for Early/Timely Sowing

Overview

DBW187 (KARAN VANDANA) is a high-yielding wheat variety released for irrigated early/timely sown conditions of North Western, North Eastern, and Central Zones of India. It offers stable yields, rust resistance, good protein content, and excellent adaptability across diverse growing conditions. Seed will be supplied to licensed firms.



Functionalities

- Ensures high and stable yield across zones
- Promotes disease resistance against major rusts
- Supports quality wheat production with >11% protein
- Enhances adaptability under early/timely sown conditions

Key Features

High yielding – Average yield up to 61.2–60.3 q/ha; potential yield up to 75.4 q/ha

Disease resistant – Resistant to leaf, stripe, and stem rusts

Quality grain – Protein content above 11% with good test weight

Implementation Overview

308	9	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR- Indian Institute of Wheat and Barley Research, Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

DBW 222 (Karan Narendra): High-Quality Wheat for Timely-Sown Irrigated Conditions

Overview

DBW222 (KARAN NARENDRA) is a high-yielding wheat variety released for irrigated, timely sown conditions of the North Western Plains Zone. It combines strong disease resistance with excellent grain quality, offering high bread loaf volume (648), good chapati score (1.5), superior bread quality (8.24), and a biscuit spread factor of 8.45. Seed will be supplied to licensed firms.



Functionalities

- Ensures high and stable yield under irrigated timely sown conditions
- Protects crops with strong resistance to leaf and stripe rusts
- Supports quality wheat production with Glu-I score of 10
- Enhances market value with superior chapati, bread, and biscuit quality

Key Features

High yielding – Average yield 61.3 q/ha; potential yield 82.1 q/ha

Quality grain – Excellent protein with Glu-I score 10 and good test weight (42 g)

High processing value – Excellent bread, chapati, and biscuit quality

Implementation Overview

210	9	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR- Indian Institute of Wheat and Barley Research, Karnal, Haryana, 132001

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

DBW 332: High-Yield, High-Quality Wheat for Early-Sown Irrigated

Overview

DBW332 is a high-yielding wheat variety released for irrigated early sown conditions of the North-Western Plains Zone. It combines rust resistance, high protein, and superior processing qualities, making it ideal for both farmers and food industries. Breeder seed will be supplied to licensees and the Indian Institute of Wheat and Barley Research will provide assistance.



Functionalities

- Provides high yield and stable performance under early sown irrigated conditions
- Protects crop with strong resistance to leaf and stripe rusts
- Enhances nutritional value with high protein and iron content
- Ensures superior processing quality for chapati, bread, and bakery products

Key Features

High yielding – Average yield 78.3 q/ha; potential yield 83.0 q/ha

Nutrient-rich – Protein 12.2%, gluten index 82%, and grain Fe 39.2 ppm

Superior quality – High hectoliter weight (78.9), chapati score (7.64), bread loaf volume (575)

Implementation Overview

25	9	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR- Indian Institute of Wheat and Barley Research, Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

DBW 372 (Karan Varuna): High-Yield, Nutrient-Rich Wheat for Early-Sown Conditions

Overview

DBW372 (Karan Varuna) is a superior wheat variety released for irrigated early sown conditions of the North-western Plains Zone. It combines high yield potential, rust resistance, excellent baking quality, and enhanced nutritional value with high protein and zinc. Breeder seed will be supplied to licensees, and the Indian Institute of Wheat and Barley Research will provide assistance.



Functionalities

- Ensures high productivity with stable yield under early sown irrigated conditions
- Safeguards crops through resistance to leaf and stripe rusts
- Enhances nutritional quality with high protein and zinc content
- Provides superior processing quality for bread, biscuits, and bakery products

Key Features

High yielding – Average yield 75.3 q/ha; potential yield 84.9 q/ha

Nutrient-rich – Protein 12.2% and zinc 40.8 ppm

Superior quality – High hectoliter weight (80.8), bread loaf volume (540 ml), and biscuit spread factor (8.2)

Implementation Overview

81	9	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR- Indian Institute of Wheat and Barley Research, Karnal, Haryana, 132001

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

DBW 371 (Karan Vrinda): High-Yield, Nutrient-Dense Wheat

Overview

DBW371 (Karan Vrinda) is a high-yielding wheat variety released for irrigated early sown conditions of the North-Western Plains Zone. It offers rust resistance, excellent processing quality, and superior nutritional value with high protein, iron, and zinc. Breeder seed will be supplied to licensees, and the Indian Institute of Wheat and Barley Research will provide assistance.



Functionalities

- Provides high productivity with stable yield under early sown irrigated conditions
- Protects crops with resistance to leaf and stripe rusts
- Enhances nutritional quality with high protein, iron, and zinc
- Ensures excellent processing quality for chapati and bread

Key Features

High yielding – Average yield 75.9 q/ha; potential yield 87.1 q/ha

Nutrient-rich – Protein 12.2%, Fe 44.9 ppm, Zn 39.9 ppm

Superior quality – Hectoliter weight 81.0, chapati score 7.7, bread loaf volume 578 ml

Implementation Overview

94
Deployed

9
Technology Readiness Level (TRL)

7
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR- Indian Institute of Wheat and Barley Research, Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

DBW 370 (Karan Vaidehi): High-Quality, Early-Sown Wheat

Overview

DBW 370 (Karan Vaidehi) is an early-sown, irrigated wheat variety developed for the North-Western Plains Zone. It offers strong rust resistance, high yield potential, and exceptional end-use quality with top chapati scores, high protein, and excellent biscuit spread factor. The Indian Institute of Wheat and Barley Research provides breeder seed and full technical support for seed production.



Functionalities

- Delivers high and stable yields under early sown irrigated conditions
- Provides resistance against leaf and stripe rusts
- Improves nutritional value with high protein content
- Ensures excellent chapati and biscuit-making quality

Key Features

High yielding – Average yield 74.9 q/ha; potential yield 86.9 q/ha

Nutrient-rich – Protein content 12.0%

Superior quality – Chapati score 8.3, biscuit spread factor 8.2, low phenol (3.6)

Implementation Overview

8	9	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR- Indian Institute of Wheat and Barley Research, Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

DBW 327 (Karan Shivani): Heat- and Drought-Tolerant Wheat

Overview

DBW327 (Karan Shivani) is a high-yielding wheat variety released for irrigated early sown conditions of the North-Western Plains Zone and Central Zone. It is stress-tolerant, with strong adaptability to heat and drought, making it suitable for sustainable wheat production. Breeder seed will be supplied to licensees, and the Indian Institute of Wheat and Barley Research will provide assistance.



Functionalities

- Delivers consistently high yields in NWPZ and CZ
- Tolerant to heat and drought stress conditions
- Suitable for irrigated early sown conditions
- Enhances productivity with bold grains and stability

Key Features

High yielding – Avg. yield: NWPZ 79.4 q/ha; CZ 69.6 q/ha

Stress tolerant – Heat and drought resistance

Bold grains – Thousand grain weight ~48 g

Implementation Overview

156
Deployed

9
Technology Readiness Level (TRL)

7
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR- Indian Institute of Wheat and Barley Research, Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

DBW 359 (Karan Shivangi): Dual-Zone Wheat Variety with Strong Disease Resistance

Overview

DBW359 (Karan Shivangi) is a high-quality wheat variety released for the Central Zone (CZ) and Peninsular Zone (PZ). It is an early maturing, disease-resistant variety with good chapati and biscuit-making qualities, making it suitable for diverse agro-climatic conditions. Breeder seed will be supplied to licensees, and the Indian Institute of Wheat and Barley Research will provide assistance.



Functionalities

- Performs well in CZ and PZ under irrigated conditions
- Early heading and maturity ensures stable productivity
- Resistant to wheat blast, leaf rust, and brown rust
- Provides excellent chapati and biscuit quality

Key Features

High yield – CZ: 41.7 q/ha; PZ: 34.5 q/ha

Quality traits – Chapati score: 7.7 (CZ), 7.4 (PZ); Biscuit factor: 8.2

Disease resistance – Resistant to wheat blast, leaf rust, brown rust

Implementation Overview

Yes	9	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR- Indian Institute of Wheat and Barley Research, Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Battery-Operated Topping Tool for Efficient FCV Tobacco Management

Overview

ICAR-CTRI Rajahmundry developed a handheld, battery-operated topping tool to replace manual topping in tobacco cultivation. It reduces farmer drudgery, saves time, and improves efficiency during the flower bud initiation stage without requiring installation. Guidance on battery charging, usage practices, and operational efficiency is provided.



Functionalities

- Performs topping at flower bud initiation stage
- Operates on rechargeable battery, self-propelled design
- Reduces manual labour and time in tobacco fields
- Allows easy use directly in the field without installation

Key Features

Efficient topping – Leaves 22–24 leaves for maximum yield & quality

Labour saving – Reduces drudgery of manual topping

Farmer-friendly – Lightweight, portable, and installation-free

Implementation Overview

85	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Central Tobacco Research Institute, Director, Rajhamundry, Andhra Pradesh, 533105

Sector: **Farm**

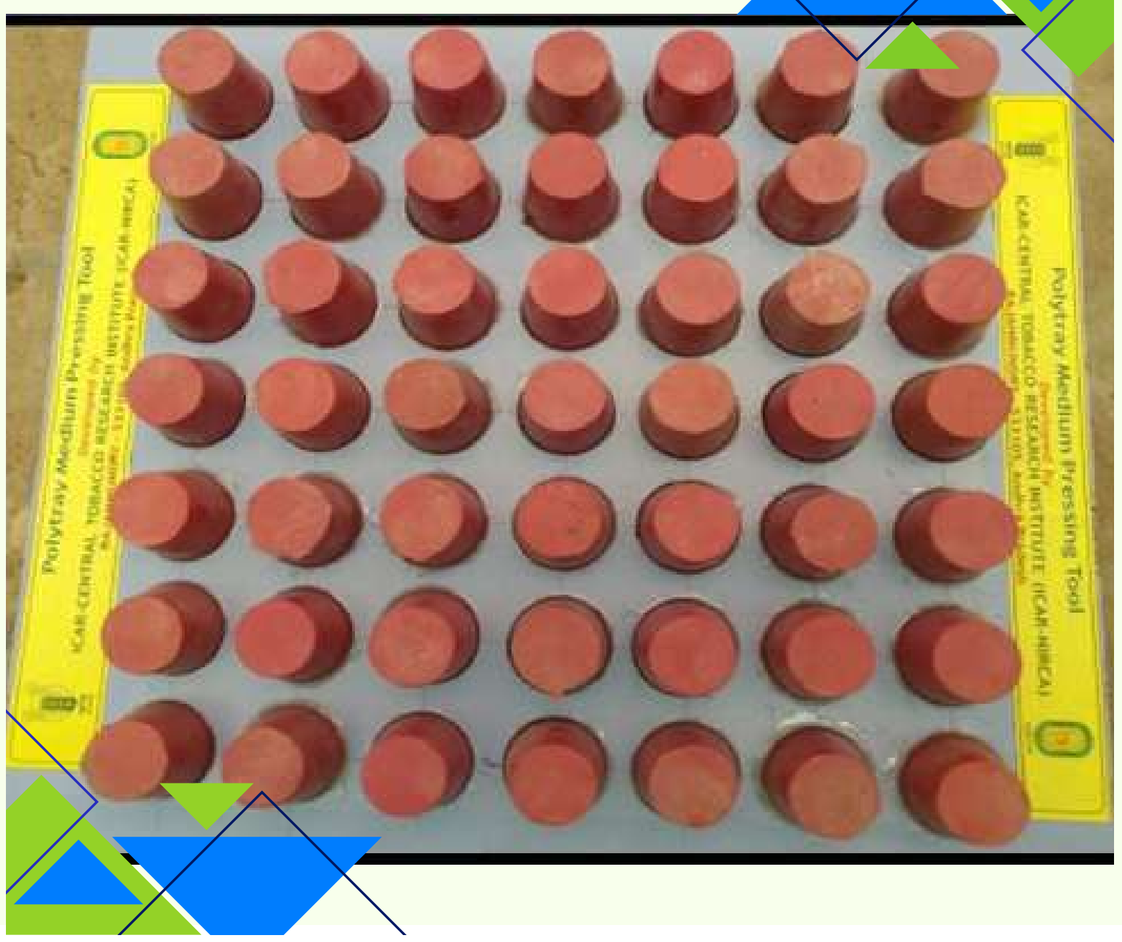
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Medium Pressing Tool for Uniform Polytray Filling in Tobacco Seedling Production

Overview

The Medium Pressing Tool developed by ICAR-CTRI enables uniform compaction of coir-pith growth medium in polytrays, replacing manual filling, which is slow, uneven, and labor-intensive. This simple wooden device with rubber corks ensures consistent cavity formation, supporting faster, healthier, and disease-free FCV tobacco seedling production while reducing drudgery in nurseries.



Functionalities

- Presses coir pith uniformly into polytrays
- Reduces labour, time, and drudgery in seedling preparation
- Enhances seedling health by ensuring consistent medium filling
- Ensures ready-to-use operation, with no installation or maintenance required

Key Features

Uniform filling – Ensures disease-free healthy seedlings

Labour-saving – Simple design reduces manual effort

Farmer-friendly – Lightweight, durable, and ready-to-use device

Implementation Overview

140	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Central Tobacco Research Institute, Director, Rajhamundry, Andhra Pradesh, 533105

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

DBW377 (Karan Bold): High-Performance Wheat for Early Maturity and Disease Resistance

Overview

DBW377 (Karan Bold) is an early-maturing, high-yielding wheat variety combining strong disease resistance with superior grain quality. With yields up to 86.4 q/ha, bold grains, and high protein content, it is ideal for irrigated regions. The variety offers excellent biscuit and chapati quality, making it both farmer- and market-friendly.



Functionalities

- Enhances farm profitability through higher yields and quality premiums
- Supports end-use industries with superior chapati and biscuit quality
- Provides resilience under disease pressure for stable production
- Supports irrigated early-sown conditions in targeted zones

Key Features

Yield potential – High grain protein (11.7%) and bold kernels (48 g TGW)

Strong genetic resistance - Reducing reliance on fungicides

Agronomic traits – Matures in 124 days, plant height 87 cm, thousand grain weight 48 g

Implementation Overview

17	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR- Indian Institute of Wheat and Barley Research, Karnal, Haryana, 132001

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Advanced Grafting and Budding Technology for High-Success Walnut Propagation

Overview

A standardized propagation technology for walnut has been developed to achieve higher grafting and budding success under protected and open conditions. By optimizing method, timing, and scion selection, the approach enhances survival and uniformity in planting material. Cleft grafting in February and chip budding across seasons ensure reliable, genetically pure walnut plant production.



Functionalities

- Improves propagation success with optimised grafting and budding techniques
- Enables year-round propagation under polyhouse and field conditions
- Ensures genetically pure and high-quality walnut planting material
- Supports large-scale nursery and orchard establishment

Key Features

Propagation methods – Cleft grafting and chip budding found superior

Timing – Cleft grafting best in February (polyhouse); chip budding fits all seasons

Plant quality – Use of lower/middle scion wood ensures higher success and pure maiden plants

Implementation Overview

Yes	8	15
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute of Temperate Horticulture, Srinagar, Union Territory of Jammu and Kashmir, 191132

Sector: **Farm**

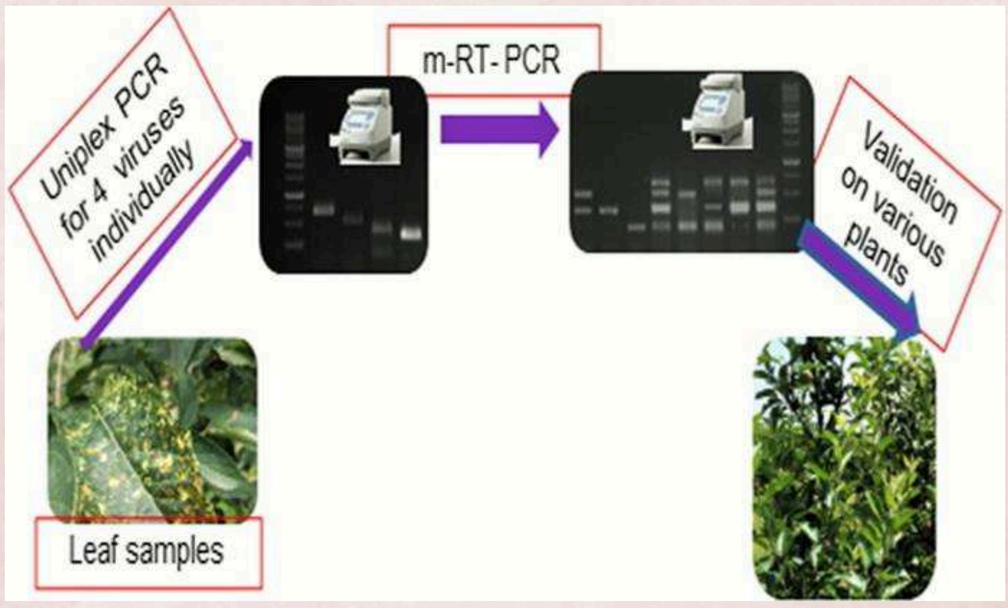
Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Optimized Tissue–Time–Technique Protocol for Real-Time Detection of Apple Viruses

Overview

ICAR–Central Institute of Temperate Horticulture, Srinagar, has developed a technology to detect major apple viruses, such as ApMV, ApNMV, ASPV, and ASGV, at an early stage. By optimising the three T's (Tissue, Time and Technique) using DAS-ELISA and RT-PCR, the system enables real-time virus identification and supports the production of virus-free, high-quality apple planting material. Training and technical support are provided.



Functionalities

- Detects apple viruses at an early stage for timely intervention
- Utilises DAS-ELISA and RT-PCR for accurate diagnosis
- Ensures virus-free quality planting material for orchards
- Provides training and technological know-how for adoption

Key Features

Detection – Optimised for ApMV, ApNMV, ASPV, and ASGV

Technology – Based on DAS-ELISA and RT-PCR methods

Output – Supports production of healthy, virus-free apple plants

Implementation Overview

Yes	6	15
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute of Temperate Horticulture, Srinagar, Union Territory of Jammu and Kashmir, 191132

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

High-Quality Feathered Nursery Apple Plant Production Technology

Overview

This technology enables the production of high-quality feathered apple nursery trees by optimising factors influencing feather formation such as plant growth regulators, spray schedules, genotype behaviour, and cultural practices. The process results in two-year-old, well-feathered trees with desirable height, caliper, and branching structure, supporting the establishment of productive orchards. Pure planting material, technical guidance, and one-week training are provided.



Functionalities

- Produces uniform, high-quality feathered apple nursery trees
- Standardises feather induction through optimised growth regulator applications
- Enhances tree structure with evenly distributed feathers and wide crotch angles
- Provides technical guidance and one-week training for adoption

Key Features

Tree Growth – Two-year-old plants reach 1.6–1.8 m height with 11–14 mm caliper

Feather Formation – 8–12 evenly spaced feathers (10–40 cm, 2–3 mm)

Ideal feather angles - Wide range of 45–55° for better orchard establishment

Implementation Overview

Yes	8	15
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute of Temperate Horticulture, Srinagar, K.D.Farm, Old Air Field, Rangreth, Srinagar, Union Territory of Jammu and Kashmir, 191132

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

High-Throughput Clonal Rootstock Multiplication Technology for Apple

Overview

This technology enables rapid vertical expansion of commercially important clonal apple rootstocks through air layering. By applying wound induction, media supplementation, and phytohormones at precise stages, it yields four additional high-quality rootstocks annually, reducing propagation time and enhancing commercial returns.



Functionalities

- Multiplies clonal rootstocks efficiently using air layering techniques
- Ensures genetically pure, high-quality planting material
- Reduces propagation time while maximising multiplication rate
- Supports simple, scalable, and large-scale commercialisation

Key Features

Propagation Method – Air layering with wound induction and phytohormones

Rootstock Selection – Plants ≥5 mm diameter at 30 cm height are used

Output – Four additional quality rootstocks produced per year

Implementation Overview

13
Deployed

8
Technology Readiness Level (TRL)

15
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute of Temperate Horticulture, Srinagar, K.D.Farm, Old Air Field, Rangreth, Srinagar, Union Territory of Jammu and Kashmir, 191132

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

Forage Seed Coating Machine

Overview

The ICAR–IGFRI Jhansi seed coating machine is designed to apply polymer-based chemical agents as a thin layer over forage seeds, ensuring protection against seed-borne and soil-borne pathogens as well as storage insects. With high coating efficiency and multipurpose use, it enhances seed quality and safety while reducing chemical exposure to operators.



Functionalities

- Applies thin polymer-based chemical coating to forage seeds
- Ensures disinfection from pathogens and storage insects
- Supports both powder/granular and liquid/polymer agents
- Minimises operator exposure to harmful chemicals

Key Features

Coating Capacity – 6 q/h for Berseem and 6.5 q/h for Cowpea seeds

Coating Efficiency – Achieves up to 97% efficiency in seed treatment

Versatility – Suitable for both granular/powder and liquid/polymer applications

Implementation Overview

Yes	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-IGFRI Jhansi, Room No.76, FMPHT Division, JHANSI, Uttar Pradesh, 284003

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Indian Council of Agricultural Research (ICAR)

VEGFAST-A technology for growing vegetables on rooftops

Overview

CPRI-VEGFAST is a user-friendly system designed for urban households to grow vegetables, salads, and microgreens on rooftops, balconies, or small yards. It ensures fresh, safe, and pesticide-free produce while transforming unused concrete spaces into productive green areas.



Functionalities

- Enables rooftop, balcony, and yard-based vegetable cultivation
- Widely accessible, cost-effective Soil-based growing system
- Maximises water use efficiency with zero runoff and percolation
- Suitable for both summer and winter vegetables

Key Features

Fresh & Safe Vegetables – Supports pesticide-free urban kitchen gardening

Quick Installation – Affordable and easy setup in 30 minutes

Green Conversion – Turns concrete surfaces into productive green zones

Implementation Overview

37	6	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR Central Potato Research Institute Shimla, Bemloe, Shimla, Himachal Pradesh, 171001

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Office of the PSA to the Government of India

LCB Fertilizers: One-Time, 100% Organic, Crop-Specific Nutrient Solution

Overview

This 100% organic, crop-specific fertilizer provides both macro and micronutrients in a single application, reducing irrigation demand and overall farming costs. It addresses environmental, health, and economic issues caused by chemical fertilizers while supporting water conservation, employment generation, and women's empowerment. Technical and commercialization support is provided.



Functionalities

- Promotes sustainable agriculture by replacing chemical fertilizers
- Provides essential nutrients in one-time use formulation
- Reduces irrigation demand and farming investment
- Supports rural employment and women empowerment

Key Features

100% Organic – Free from synthetic chemicals and safe for environment

Crop-Specific – Customized nutrient formulation for targeted crops

Cost-Effective – Lowers irrigation and farming investment needs

Implementation Overview

Yes	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Kanpur, NL-1-115-L, Manufacturing Science Laboratory, Northern Laboratories , Kanpur, Uttar Pradesh, 208016

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Retrofit Vending Cart Models

Overview

The retrofit modular vending cart is a lightweight, affordable, and user-friendly mobile vending solution designed to improve vendor efficiency and comfort. Its corrosion-resistant frame, balanced weight distribution, and flexible loading options enhance manoeuvrability especially for women vendors while optional cold storage and a flex canopy expand product choices and support diversified, climate-resilient livelihoods.



Functionalities

- Enhances vendor mobility through lightweight and corrosion-resistant design
- Promotes ease of use with stable weight distribution for safe maneuvering
- Expands vending options via modular structure and cold storage attachment
- Provides comfort and usability with a flexible canopy for shade

Key Features

Lightweight Steel Frame – Corrosion-resistant and easy to maneuver

Modular Design – Adaptable for front- or back-loading assembly

Vendor-Friendly Comfort – Flex canopy for shade and optional cold storage

Implementation Overview

Yes	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Rural Technology Action Group, 2nd Floor, ICSR Building, IIT Madras, Chennai, Tamil Nadu, 600036

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Office of the PSA to the Government of India

Mango seed decorticator

Overview

The Mango Seed Decorticator uses a rotor with rows of steel pegs and fixed pegs to create a shearing action, effectively removing the shell from mango seeds. The kernels are separated through a funnel collector for efficient processing. Handholding support is provided for 6 months.



Functionalities

- Processes mango seeds efficiently through shearing action.
- Separates kernels cleanly using an inbuilt collector.
- Reduces manual drudgery in decortication work.
- Enhances productivity with simple operational design.

Key Features

Rotor with Steel Pegs – Ensures effective shearing action

Hopper and Collector System – Facilitates easy feeding and collection

Supported – Rutag handholding support for 6 months

Implementation Overview

Yes	9	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Rural Technology Action Group, 2nd Floor, ICSR Building, IIT Madras, Chennai, Tamil Nadu, 600036

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Office of the PSA to the Government of India

Air Cooled based vegetable vending cart

Overview

The air-cooled vegetable vending cart developed by RuTAG, IIT Roorkee uses an eco-friendly evaporative cooling system to reduce heat-induced spoilage. Equipped with a DC pump and fan for optimal cooling, it preserves produce for 2–3 days. Its modular design and tricycle variant minimize losses and improve vendor livelihoods, supported by training and technical assistance.



Functionalities

- Extends vegetable shelf life through evaporative cooling
- Reduces economic losses for street vendors
- Provides mobility with pushcart and tricycle variants
- Supports vendors with troubleshooting and training

Key Features

Eco-Friendly Cooling – Uses evaporative cooling with water spray and fan

Modular Design – Includes pushcart, cooling unit, and tricycle variant

Supported – Technical assistance and live training demonstrations provided

Implementation Overview

Yes	9	4
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG, IIT Roorkee,
Department of Hydro and Renewable Energy (HRED), Roorkee,
Uttarakhand, 247667

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Pico hydro based cold storage

Overview

This cold storage system harnesses energy from Pico hydropower units to reduce post-harvest losses and extend the shelf life of perishable produce in remote, hilly regions. By integrating control mechanisms and enabling surplus power use, it strengthens rural livelihoods. A 5 kW unit has been successfully deployed in Bajlari, Uttarkashi by RuTAG, IIT Roorkee.



Functionalities

- Preserves fruits and vegetables with cold storage integration
- Reduces post-harvest losses and market volatility
- Supplies surplus power for households and small industries
- Supports farmers with troubleshooting and live training

Key Features

Energy-Efficient – Uses Pico hydropower to run cold storage units

Multi-Purpose – Supports local food processing and rural electrification

Supported – Technical assistance and live demonstrations provided

Implementation Overview

Yes	9	10
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG, IIT Roorkee,
Department of Hydro and Renewable Energy (HRED), Roorkee,
Uttarakhand, 247667

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Integrated Rice Cleaning, Drying, and Weighing Machine

Overview

The integrated processing machine developed by Tekorange Engineering Pvt. Ltd. streamlines post-harvest rice handling by combining cleaning, drying, and weighing in a single unit. Equipped with sorting mesh, feeding and processing chambers, crossflow air cleaning, and a controlled hot-air drying system, it ensures rapid, efficient processing of high-quality rice at procurement centres.



Functionalities

- Performs cleaning, drying, and weighing in a single process
- Removes impurities using mesh sorting and cross-flow air cleaning
- Ensures quick and uniform drying with hot air and controlled humidity
- Provides good-quality rice output for procurement centres

Key Features

Integrated – Combines cleaning, drying, and weighing in one unit

Efficient – Uses insulated chambers and optimised heating for faster drying

Supported – Technical and operational support provided by Tekorange Engineering Pvt. Ltd

Implementation Overview

Yes	6	150
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Kanpur, NL-1-115-L, Manufacturing Science Laboratory, Northern Laboratories , Kanpur, Uttar Pradesh, 208016

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Office of the PSA to the Government of India

Cold Pressed Oil Extraction Machine

Overview

This scientifically designed machine efficiently extracts oil from seeds using a plunger system and hydraulic jack mechanism. Made of superior-quality steel, it ensures stable performance, durability, and energy-efficient operations. Training manuals and SOPs are available with the technology provider for effective implementation.



Functionalities

- Extracts oil through hydraulic pressure with minimal energy cost
- Ensures efficient crushing of oilseeds with stable performance
- Provides durability and long service life using high-quality steel
- Enhances productivity with simplified operations and support

Key Features

Robust – Built with superior-quality steel for stability and long life

Efficient – Uses hydraulic pressure for maximum oil extraction

Supported – Training manual and SOPs provided with the technology

Implementation Overview

22	6	150
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Kanpur, NL-1-115-L, Manufacturing Science Laboratory, Northern Laboratories, Kanpur, Uttar Pradesh, 208016

Sector: **Farm**

Category : **Integrated Crop & Post-Harvest Systems**

Office of the PSA to the Government of India

Sabjikothi – Intelligent Fruit & Vegetable Preserver

Overview

Sabjikothi is an intelligent, low-energy preserver that extends the shelf life of fruits and vegetables by 3–12 days, making it ideal for small vendors and traders. With zero maintenance, minimal water use, and capacities of 200–500 kg, it reduces spoilage, supports mobility, and enables cost-effective preservation through adaptive environmental control.



Functionalities

- Increases shelf life of fruits and vegetables
- Reduces energy consumption by 20 Watts
- Offers self-adaptable intelligent operation
- Supports small business efficiency and storage management

Key Features

Economic- Economical and low-maintenance solution (1 litre/day)

Flexibility- Capacity up to 500 kg with mobile app integration

Supported – Technical support and guidance provided

Implementation Overview

Yes	6	150
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Kanpur, NL-1-115-L, Manufacturing Science Laboratory, Northern Laboratories , Kanpur, Uttar Pradesh, 208016

Sector: **Farm**
Category : **Integrated Crop & Post-Harvest Systems**

Office of the PSA to the Government of India

Subjee Cooler – Passive Green Produce Preserver

Overview

The Subjee Cooler is a passive cooling solution that keeps fruits, vegetables, mushrooms, and flowers fresh for extended periods without electricity, fuel, or recurring costs. It works on the principle of evaporative cooling while enabling natural, chemical-free ripening. Designed for easy use, it offers low-maintenance operation with simple placement and cleaning needs, and comes with a three-year warranty.



Functionalities

- Preserves freshness of vegetables, fruits, and flowers naturally
- Eliminates chemical ripening agents by enabling natural fruit ripening
- Operates without electricity or fuel, ensuring zero recurring costs
- Reduces post-harvest losses and supports small farmers and vendors

Key Features

Eco-friendly – Runs entirely on evaporative cooling without external energy

Reliable – Extends shelf life: 5–7 days for fruits/vegetables, 2–3 days for mushrooms

Supported – Comes with 3-year warranty and guidance for maintenance

Implementation Overview

95	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Bombay,
CTARA, Mumbai,
Maharashtra,
400076

RURAL MANUFACTURING & PROCESSING TECHNOLOGIES

Sector: **Farm**

Category : **Rural Manufacturing & Processing Technologies**

Council of Scientific & Industrial Research (CSIR)

Sustainable Bamboo Processing Innovation

Overview

Arola Bamboo Products Pvt Ltd (Madurai, est. 2019) crafts sustainable, handcrafted bamboo products like home décor, utility items, and eco-gifts. Empowering women's groups and local communities through training and employment, Arola blends tradition with innovation to reduce plastic waste, promote biodiversity, and foster eco-conscious, inclusive livelihoods.



Functionalities

Decentralized Bamboo Production - Community-led, women-focused manufacturing model

Plastic Alternatives - Biodegradable bottles, brushes, giftware

Skill-Based Livelihoods - Training for rural, marginalized communities

Circular Economy Support - Waste reduction, renewable bamboo use

Key Features

Biodegradable - Renewable bamboo, plastic alternative

Inclusive - Women-led rural enterprise model

Market-Linked - Branding, sales, e-commerce support

Implementation Overview

Yes	**7**	**7**
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

IIT Palakkad Technology IHub Foundation (Arola Bamboo Products Pvt Ltd), 10b Jawagar Second Street, SS Colony, Madurai, Tamil Nadu, 625016

Sector: **Farm**

Category : **Rural Manufacturing & Processing Technologies**

Council of Scientific & Industrial Research (CSIR)

Biodegradable Tableware

Overview

This technology produces biodegradable cutlery, plates, bowls, spoons, and cups from agricultural wastes like rice straw, coconut shells, and sugarcane bagasse. Microwave- and food-safe, the products replace single-use plastics while supporting circular economy goals, as they degrade into nutrient-rich animal feed. Technical consultancy support is available for deployment and commercialization.



Functionalities

- Converts agricultural waste into biodegradable cutlery
- Reduces single-use plastic waste in public places
- Transforms post-use products into nutrient-rich animal feed
- Supports circular economy through post-use biodegradation

Key Features

Eco-friendly – Made from rice straw, coconut shells, and bagasse

Versatile – Safe for hot/cold foods and microwave-friendly

Sustainable – Converts waste to usable resources

Implementation Overview

20	9	10
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Institute for Interdisciplinary Science and Technology, Head, Business Development Division, Thiruvananthapuram, Kerala, 695019

Sector: **Farm**

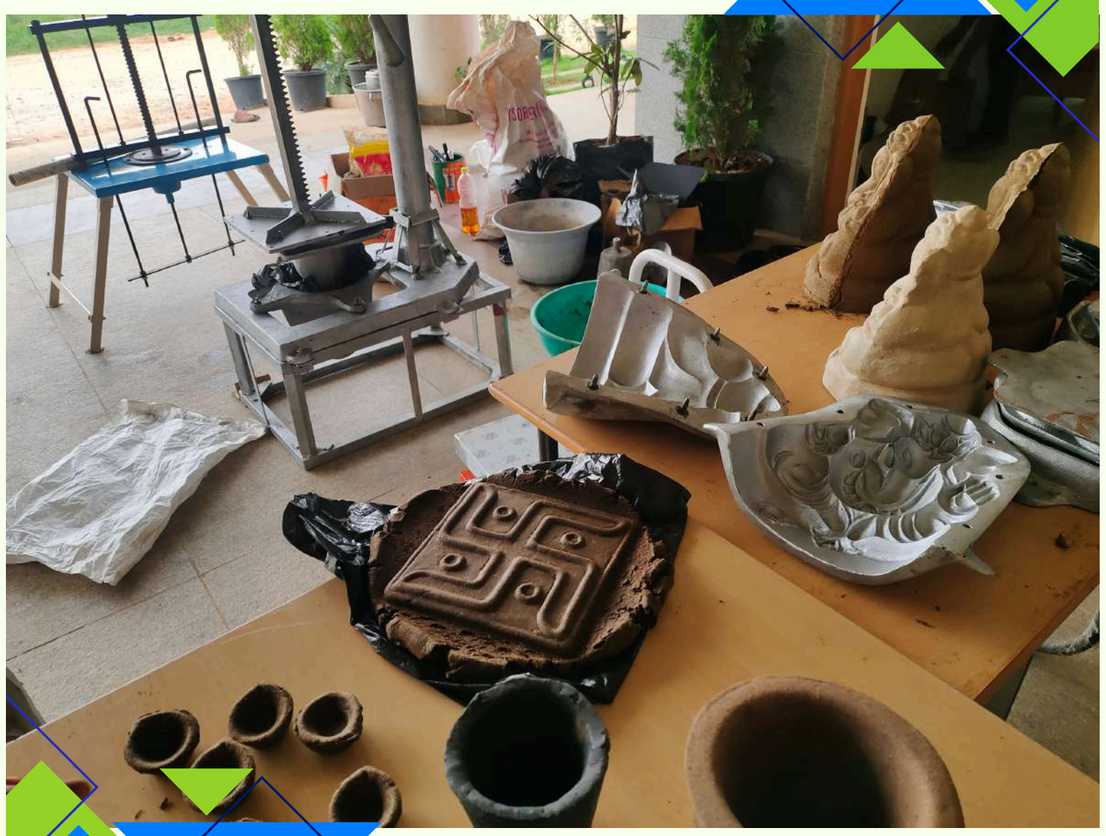
Category : **Rural Manufacturing & Processing Technologies**

Department of Science and Technology (DST)

Biomaterial-Based Medium Press Machine

Overview

An innovative multi-die mechanical hand press machine has been developed to produce eco-friendly Swastik symbols, Yagn Kunds, dhoop cups, and similar biodegradable items. Using a precise blend of cow dung, bagasse, and natural binders, the machine ensures sturdy, pest-resistant products. It operates on a Punch and Die mechanism for efficient, sustainable production.



Functionalities

- Produces biodegradable items like Swastik, Yagn Kund, and dhoop cups
- Uses cow dung, bagasse, and natural binders for sturdy, pest-resistant products
- Operates via a mechanical hand press with Punch and Die mechanism
- 10 — Enables efficient multi-item production with 10 dies

Key Features

Biodegradability – Products are environmentally friendly and fully decomposable

Multi-die Capability – A Single machine produces several product types simultaneously

Training Support – Operational guidance provided during the scheduled period

Implementation Overview

10
Deployed

9
Technology Readiness Level (TRL)

2
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Rural Manufacturing & Processing Technologies**

Department of Science and Technology (DST)

Cake (tikki), Sambrani cup and Diya making machine

Overview

A multi-die mechanical hand press machine has been developed to produce eco-friendly cakes, Sambrani cups, and Diyas using biodegradable materials. The innovation combines cow dung, bagasse, and natural binders to create sturdy, pest-resistant products. Operating on a Punch and Die mechanism, the machine enables sustainable, low-cost manufacturing for small enterprises.



Functionalities

- Presses cow dung, bagasse, and natural binders into cakes, Sambrani cups, and Diyas
- Produces biodegradable products efficiently with consistent quality
- Operates through a mechanical hand press using a punch and die mechanism
- Provides training in business management, marketing, and customer relations

Key Features

Biodegradability – Products are eco-friendly and fully decomposable

Multi-die Capability – A Single machine provides multiple product types simultaneously

Training Support – Operational guidance and manufacturing support are provided and supported

Implementation Overview

50	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Rural Manufacturing & Processing Technologies**

Department of Science and Technology (DST)

Diya making machine

Overview

An eco-friendly diya has been developed using a precise blend of cow dung, bagasse, and natural binders, making it biodegradable, sturdy, and pest-resistant. Produced using a mechanical hand press with a Punch and Die mechanism, the diya exemplifies sustainable innovation, offering an eco-conscious alternative to traditional clay or paraffin-based lamps.



Functionalities

- Presses biomaterials like cow dung, bagasse, and binders to form diyas
- Operates through a mechanical hand press using a Punch and Die mechanism
- Produces sturdy, eco-friendly diyas resistant to pests
- Provides training for operation and process handling

Key Features

Eco-Friendly – Diyas are fully biodegradable and sustainable

Durable Quality – Pest-resistant and sturdy with a natural binder formulation

Training Support – Comprehensive training for setup and operation is provided and supported

Implementation Overview

25
Deployed

9
Technology Readiness Level (TRL)

2
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Rural Manufacturing & Processing Technologies**

Department of Science and Technology (DST)

Semi-automatic Idol making machine

Overview

A semi-automatic eco-friendly idol making machine has been developed using a blend of cow dung, bagasse, and natural binders, making it biodegradable, durable, and pest resistant. Produced through a semi-automatic hydraulic hand press employing the Punch and Die mechanism, this sustainable innovation offers a green alternative to conventional idols, reducing environmental pollution and promoting rural livelihoods.



Functionalities

- Shapes biodegradable idols using cow dung, bagasse, and natural binders
- Operates via a semi-automatic hydraulic hand press with Punch and Die system
- Produces pest-resistant, eco-friendly idols
- Supports smooth setup and operation through training

Key Features

Eco-Friendly – Fully biodegradable idol-making process

Hydraulic – Semi-automatic system ensures precision and reduced labour

Support – Comprehensive training for setup and operation is provided and supported

Implementation Overview

Yes	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Rural Manufacturing & Processing Technologies**

Department of Science and Technology (DST)

Manual Idol making machine

Overview

The manual idol-making machine developed creates eco-friendly, biodegradable idols using cow dung, bagasse, and natural binders. It ensures sturdy, pest-resistant products and comes with training support for smooth adoption.



Functionalities

- Produces biodegradable idols using cow dung, bagasse, and natural binders
- Ensures idols are sturdy and pest-resistant
- Shapes idols using a mechanical hand press with Punch and Die mechanism
- Enables precise formation of desired idol shapes efficiently

Key Features

Biodegradable material – Uses cow dung, bagasse, and natural binders for sustainability

Mechanical – Employs Punch and Die mechanism for precise idol shaping

Training support – Includes detailed training for installation, operation, and maintenance

Implementation Overview

Yes	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Rural Manufacturing & Processing Technologies**

Department of Science and Technology (DST)

Eco-Friendly Plant Pot Making Machine

Overview

This eco-friendly pot-making technology developed utilizes cow dung and agricultural waste to produce completely biodegradable pots, offering a sustainable alternative to plastic planters. The manually operated pot-making machine standardizes production, reduces per-unit cost, and supports large-scale manufacturing. This innovation fosters rural entrepreneurship, waste valorization, and environmentally responsible livelihood generation through hands-on training.



Functionalities

- Produces biodegradable pots using cow dung and agricultural waste
- Operates via a manually operated pot-making machine for standardised production
- Enables mass production to reduce per-unit cost
- Supports eco-friendly and sustainable gardening solutions

Key Features

Biodegradable material – Utilises cow dung and agri-waste for sustainable pot making

Manual operation – Provides simple and cost-effective production

Training support – Includes hands-on training for installation and operation

Implementation Overview

50
Deployed

9
Technology Readiness Level (TRL)

2
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Farm**

Category : **Rural Manufacturing & Processing Technologies**

Indian Council of Agricultural Research (ICAR)

Improved Mango Harvester for High-Speed, Damage-Free Fruit Collection

Overview

The Improved Mango Harvester ensures safe harvesting with 4–5% less fruit loss, increasing harvesting speed to 600–800 fruits per hour compared to 150–200 fruits/hour by hand. It offers an economical, durable, and efficient solution for commercial mango orchards.



Functionalities

- Promotes safe harvesting with minimal fruit loss
- Ensures faster harvesting compared to manual methods
- Supports ease of use with lightweight and durable design
- Enhances economic efficiency and productivity

Key Features

Efficient – Increases harvesting speed significantly

Durable – Lightweight, unbreakable frame with sharp blades

Cost-effective – Economical solution at Rs. 0.25/kg

Implementation Overview

No	8	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute for Subtropical Horticulture, Lucknow, Uttar Pradesh, 226101

Sector: **Farm**

Category : **Rural Manufacturing & Processing Technologies**

Ministry Of Textiles

Agro-Textile–Based Protected Cultivation for Higher Farm Productivity

Overview

Agro-textiles provide a protected cultivation environment that significantly boosts crop yields typically by 40–80%, and up to 100% under optimal conditions. By reducing pest pressure, moderating microclimate, and enhancing resource use efficiency, this technology supports sustainable intensification. Farmers receive handholding for crop selection, three years of maintenance, and comprehensive field support.



Functionalities

- Promotes higher crop productivity under protected cultivation
- Enhances income of farmers through improved yields
- Supports integrated pest management practices
- Facilitates efficient use of agro-textile materials

Key Features

Productivity-Enhancing – Increases crop yields by 40–100%

Farmer-Focused – Provides hand-holding for crop selection and management

Sustainable – Supports integrated pest management and efficient resource use

Implementation Overview

Yes	6	9
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Technical Textiles Mission, Udyog Bhawan, New Delhi, 110011

Sector: **Farm**

Category : **Rural Manufacturing & Processing Technologies**

Ministry of Micro, Small, and Medium Enterprises

Solar Charkha: Clean-Energy Spinning Technology for Rural Livelihoods

Overview

The Solar Charkha is a drudgery-reducing, energy-efficient spinning technology designed to enhance productivity and income for rural artisans, especially women and youth. Developed under MSME and KVIC initiatives, it supports sustainable yarn production through solar power and links to programmes like Solar Vastra, Khadi Mark, and PMEGP for enterprise development.



Functionalities

- Promotes income generation through solar yarn production
- Reduces human labor in spinning activities
- Supports employment for women and youth
- Facilitates sustainable development via solar charkha clusters

Key Features

Sustainable- Clean-energy, maintenance -friendly solar spinning system

Certified- Eligible for PMEGP support and KVIC certification (Khadi Mark)

Industry-Integrated- Produces yarn compatible with Solar Vastra value chain

Implementation Overview

6	8	15
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Khadi and Village Industries Commission, Mahatma Gandhi Institute for Rural Industrialization (MGIRI), Wardha, Maharashtra, 442001

Sector: **Farm**

Category : **Rural Manufacturing & Processing Technologies**

Electronic Jacquard Handloom for High-Efficiency Korai Mat Weaving

Overview

This machine replaces traditional mechanical jacquard weave taps with automatic controls, integrating a controller and electromagnetic needle selector. It allows digital storage and retrieval of designs, improves ergonomics for weavers, and increases productivity by 300%. Six-month training in design and weaving is provided.



Functionalities

- Replaces traditional jacquard taps with automated electronic controls
- Enhances weaving efficiency and ergonomics for artisans
- Stores and retrieves weaving designs digitally
- Reduces production time from 9–11 days to 2–3 days

Key Features

Automatic Control – Electromagnetic needle selector for precise weaving

Digital Design Integration – Seamless storage and retrieval of complex weaving patterns

High Productivity – Increases output by 300% and reduces design mat production time

Implementation Overview

Yes	9	30
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Rural Technology Action Group, 2nd Floor, ICSR Building, IIT Madras, Chennai, Tamil Nadu, 600036

Sector: **Farm**

Category : **Rural Manufacturing & Processing Technologies**

Office of the PSA to the Government of India

Puffed Rice (Muri) Making Machine

Overview

RuTAG-Cell, IIT Kharagpur, developed a motor-driven puffed rice machine that automates stirring, heating, puffing, and separation processes. It ensures uniform quality, higher productivity, and safety compared to manual methods. Support for training and operational guidance is available.



Functionalities

- Automates preheating, puffing, and separation of rice
- Produces puffed rice within 18–20 seconds per batch
- Enhances safety and reduces drudgery compared to manual methods
- Provides consistent quality and higher productivity

Key Features

Efficient – Motor-driven revolving ‘handi’ and sieve separation system

Fast – Puffs rice in just 18–20 seconds per cycle

Supported – Training and operational guidance provided

Implementation Overview

11	9	150
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Kharagpur,
RuTAG-Cell, Kharagpur,
West Bengal, 721302

Sector: **Farm**

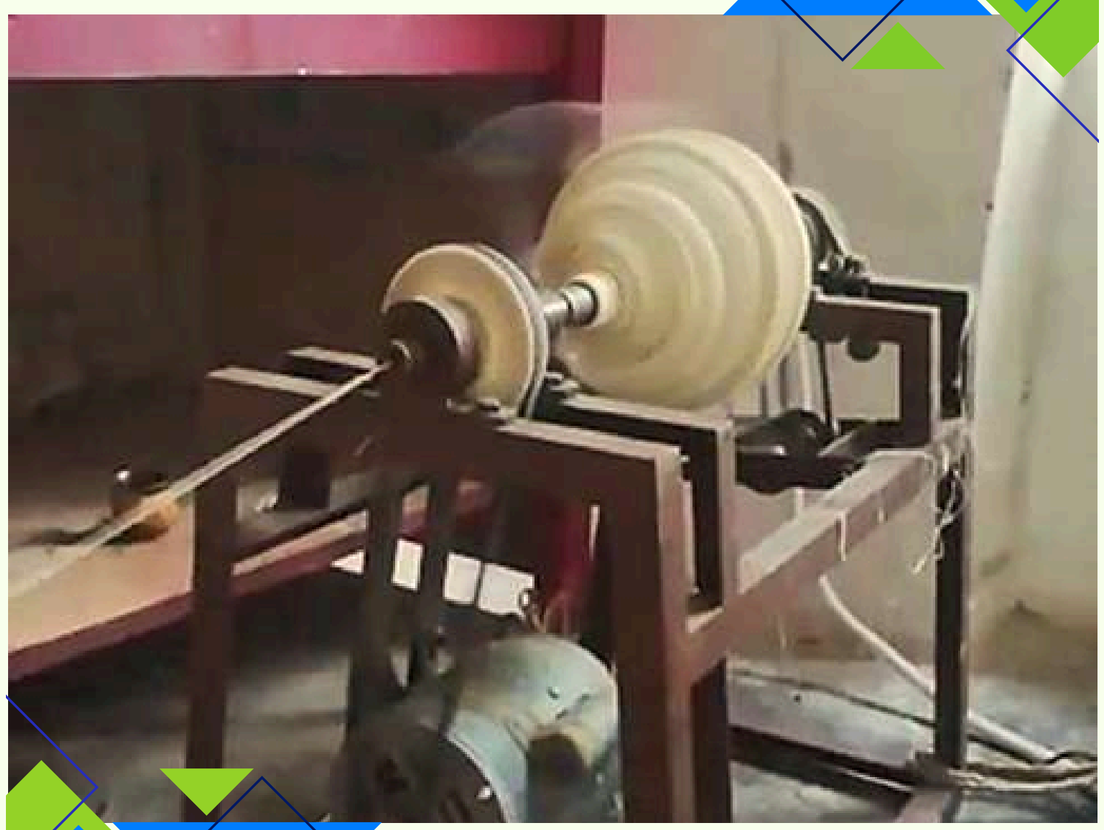
Category : **Rural Manufacturing & Processing Technologies**

Office of the PSA to the Government of India

Motorized Sutli making technologies

Overview

RuTAG-Cell, IIT Kharagpur, has developed an induction motor-driven machine for making Sutli (string) from banana, jute, and other fibrous materials. It ensures superior quality output, eliminates gender-related operational issues, and provides a simple, efficient process. Training and operational support are available.



Functionalities

- Produces high-quality single twisted Sutli from natural fibres
- Automates feeding, twisting, and swathing operations
- Eliminates gender-related barriers in manual string making
- Enhances productivity and reduces labour drudgery

Key Features

Efficient – Induction motor-driven single twist mechanism

Versatile – Works with banana, jute, and other fibrous materials

Supported – Training and operational guidance provided by RuTAG-Cell, IIT Kharagpur

Implementation Overview

Yes	9	150
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Kharagpur,
RuTAG-Cell, Kharagpur,
West Bengal, 721302

Sector: **Farm**

Category : **Rural Manufacturing & Processing Technologies**

Motorized potter’s wheel

Overview

RuTAG-Cell, IIT Kharagpur, has developed a compact power-driven pottery wheel designed for continuous production of earthen pots. It enables a single person to produce both small and large pots with ease, improving efficiency and reducing labor drudgery. Operational support is available.



Functionalities

- Produces earthen pots up to 50 cm height and 40 cm diameter
- Enables continuous production with minimal manual effort
- Reduces drudgery by replacing traditional manual pottery wheels
- Enhances efficiency for artisans through compact, user-friendly design

Key Features

Compact – Small design suitable for workshops and rural artisans

Efficient – Gear and pulley power transmission for smooth operation

Supported – Training and operational guidance provided by RuTAG-Cell, IIT Kharagpur

Implementation Overview

Yes	9	150
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Kharagpur,
RuTAG-Cell , Kharagpur,
West Bengal, 721302

Sector: **Farm**

Category : **Rural Manufacturing & Processing Technologies**

Sabai grass rope making machine

Overview

RuTAG-Cell, IIT Kharagpur, has developed a rope-making machine to reduce the drudgery involved in traditional Sabai grass rope making. The machine, initially leg-driven and later motor-driven, allows one-person operation with simultaneous grass feeding. It ensures high-quality ropes and significantly improves production rates.



Functionalities

- Produces ropes by twisting yarns into strands and combining them efficiently
- Reduces manual effort and drudgery in Sabai grass rope making
- Enables one-person operation with simultaneous grass feeding
- Enhances quality and productivity compared to hand-made ropes

Key Features

Versatile – Can be operated manually (leg-driven) or motor-driven

Efficient – Delivers higher rope output with uniform quality

Supported – Training and operational support provided by RuTAG-Cell, IIT Kharagpur

Implementation Overview

Yes	9	150
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Kharagpur,
RuTAG-Cell , Kharagpur,
West Bengal, 721302

Sector: **Farm**

Category : **Rural Manufacturing & Processing Technologies**

Rural pottery firing kiln using rat-trap construction technique

Overview

The improved pottery kiln developed by RuTAG IIT, Delhi, is designed to make pottery production more fuel-efficient and eco-friendly. By incorporating air gaps through rat-trap bonded construction, the kiln reduces pollution and fuel consumption significantly. Post-commercialisation support is available through RuTAG, IIT Delhi.



Functionalities

- Enhances efficiency of pottery kilns
- Reduces pollution during pottery making
- Saves fuel through innovative construction
- Supports sustainable traditional craftsmanship

Key Features

Wall – Rat-trap bonded wall structure with air gaps

Floor – Floor insulation for heat retention

Supported – Post-commercialisation guidance and technical support provided

Implementation Overview

25	7	15
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Delhi, RuTAG Lab, Block-II, Room No. 247, Department of Mechanical Engineering, New Delhi, 110016

Sector: **Farm**

Category : **Rural Manufacturing & Processing Technologies**

Tulsi Mala Bead Making Device

Overview

The Tulsi Mala Bead Making Device, developed by RuTAG IIT Delhi, enables artisans to produce high-quality beads of varying sizes and shapes efficiently. It is ergonomically designed for flexibility of use and supports artisans in traditional bead-making. Post-commercialisation support is available through RuTAG, IIT Delhi.



Functionalities

- Produces beads of multiple shapes and sizes
- Operates efficiently on a standard 220V AC supply
- Offers flexible operation speed for artisans
- Enhances ergonomics by supporting multiple working positions

Key Features

Capacity- Bead turning capacity of 5 mm to 25 mm diameter

Versatile- Adjustable operating speed between 500–4500 rpm

Supported – Post-commercialisation guidance and technical support provided

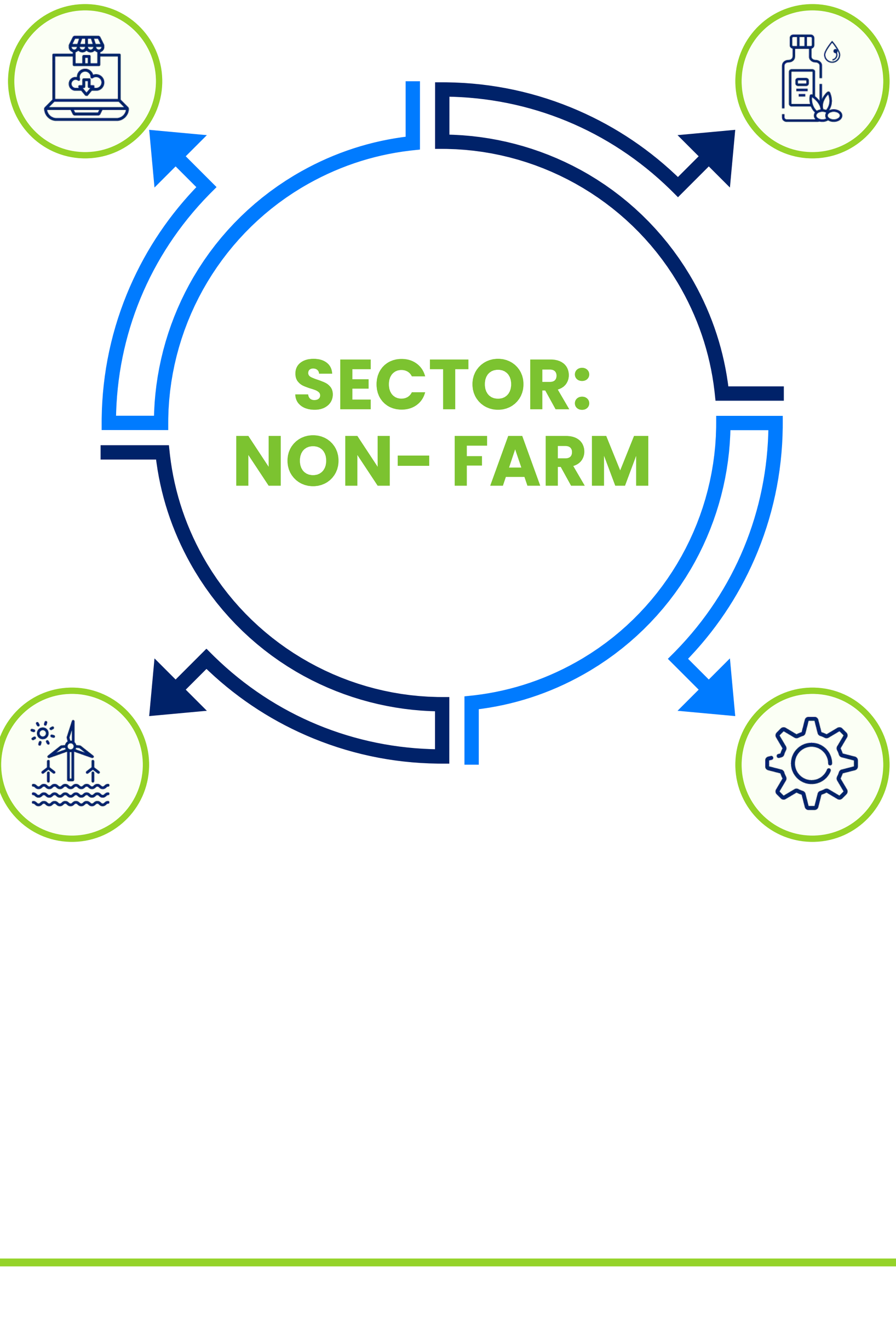
Implementation Overview

100	9	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Delhi, RuTAG Lab, Block-II, Room No. 247, Department of Mechanical Engineering, New Delhi, 110016


SECTOR:
NON- FARM

ARTISAN, HANDLOOM & CULTURAL LIVELIHOODS

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Council of Scientific & Industrial Research (CSIR)

Herbal Soap Formulation Technology

Overview

A natural, plant-based herbal soap formulated with botanical herbs, offering gentle, non-toxic cleansing. Enriched with therapeutic and antibacterial properties, it is free from artificial colours and fragrances. Post-commercialisation support ensures continued market relevance through ongoing improvements.



Functionalities

- Provides gentle, chemical-free skin cleansing
- Offers therapeutic and antibacterial skin benefits
- Reduces environmental impact from synthetic chemicals
- Adapts product profile to market trends

Key Features

Natural – Plant-based ingredients with botanical herbs

Safe – Non-toxic and skin-friendly formulation

Sustainable – Environmentally friendly with no artificial colours or fragrances

Implementation Overview

Yes	8	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-IHBT Palampur, Coordinator Business Development & Marketing Unit, CSIR-IHBT, Palampur Post Box. No. 06, Himachal Pradesh, 176061

Sector: **Non Farm**

Category : **Artisan, Handloom & Cultural Livelihoods**

Council of Scientific & Industrial Research (CSIR)

Flower-based incense sticks and fragrant cones.

Overview

CSIR-CIMAP, Lucknow developed an innovative process to produce eco-friendly incense sticks and cones from flowers and leaves offered at places of worship. This sustainable technology reduces air, soil, and water pollution while promoting waste recycling, rural employment, and chemical-free products. It aligns with Swachh Bharat, Skill India, and Atmanirbhar Bharat Missions.



Functionalities

- Converts temple flower waste into incense
- Reduces air, soil, and water pollution
- Generates rural and women employment opportunities
- Supports national cleanliness and self-reliance initiatives

Key Features

Eco-Friendly – Recycles floral temple waste sustainably

Safe – Non-toxic, low-smoke formulation tested by CSIR

Empowering – Promotes livelihood generation and circular economy

Implementation Overview

5	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Institute of Medicinal and Aromatic Plants, CSIR-Cimap, near Kukrail Picnic Spot Road, Lucknow, Uttar Pradesh, 226015

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Council of Scientific & Industrial Research (CSIR)

Herbal Dhoop

Overview

CSIR-IHBT Palampur has developed Herbal Dhoop, a plant-based alternative to conventional dhoop made from botanical herbs. It is gentle, free from toxic ingredients, and offers therapeutic and antibacterial benefits. Post-commercialisation support for modifications and optimisation is available.



Functionalities

- Provides a natural alternative to conventional dhoop using plant-based ingredients
- Offers a gentle formulation free from toxic substances
- Exhibits therapeutic and antibacterial properties
- Enhances environment and well-being through aromatic use

Key Features

Composition – Made from plant-based ingredients and herbs

Benefits – Gentle, therapeutic, and antibacterial

Support – Post-commercialisation modifications and optimisation offered

Implementation Overview

Yes	8	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-IHBT Palampur,
Coordinator Business Development & Marketing Unit,
Palampur Post Box. No. 06,
Kangra, Himachal Pradesh,
176061

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Council of Scientific & Industrial Research (CSIR)

Artifacts making using dry flowers

Overview

CSIR-IHBT Palampur has developed a technology for artifact making using dry flowers, designed to enhance the longevity of flowers. This innovation enables the creation of diverse decorative and utility products such as gifting cards, sachets, jewellery, candles, frames, and other ornamental items, with post-commercialisation support for modifications and optimisation.



Functionalities

- Preserves dry flowers for long-lasting decorative use
- Creates a variety of products including greeting cards, sachets, jewellery, candles, and frames
- Supports gifting and home décor applications with aesthetic appeal
- Enables post-commercialisation modifications based on market demand and feedback

Key Features

Application – Used for making gifting cards, jewellery, candles, frames, and décor items.

Benefits – Extends flower life while fostering sustainable product development

Support – Post-commercialisation modifications and optimisation offered

Implementation Overview

Yes	8	4
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-IHBT Palampur,
Coordinator Business Development & Marketing Unit,
Palampur Post Box. No. 06,
Kangra, Himachal Pradesh,
176061

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Council of Scientific & Industrial Research (CSIR)

Kappaphycus alvarezii seaweed-based organic plant bio stimulant for raising agricultural crop productivity

Overview

CSIR CSMCRI Bhavnagar has developed an integrated, low-cost seaweed-based biofertilizer technology to support sustainable agriculture. Already commercialised by licensees such as M/s Aquagri Processing Pvt. Ltd., the process enables production of ~60 tons of liquid biofertilizer per hectare from 100 tons of fresh biomass and additional by-products like 2.5–4.5 tons of κ-carrageenan. Extensive technical support and demonstrations are provided.



Functionalities

- Produces ~60 tons of liquid seaweed-based biofertilizer per hectare for affordable use by marginal farmers
- Converts seaweed residues into 2.5–4.5 tons of refined/semi-refined κ-carrageenan per hectare
- Generates biomass for calorific and industrial applications
- Enables commercial-scale operations with demonstrated production capacities of 100 L/batch for liquid fertiliser

Key Features

Integrated – Produces biofertilisers and high-value by-products such as κ-carrageenan

Eco-Friendly – Promotes sustainable marine and agricultural use

Supported – Includes demos, documentation, training, and six months' post-licensing support

Implementation Overview

Yes	9	10
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR - Central Salt & Marine Chemicals Research Institute (CSMCRI), G B Marg Waghawadi Road, Bhavnagar, Gujarat, 364001

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Council of Scientific & Industrial Research (CSIR)

Preparation of refined κ-carrageenan from *Kappaphycus alvarezii* granules via semi refined kappa-carrageenan

Overview

CSIR CSMCRI Bhavnaga has developed a technology to produce refined κ-carrageenan from solid seaweed residue, with high yield (25–30% w.r.t. dry seaweed granules). Already transferred to industry for commercial production in India, it reduces dependence on imports and offers revenue potential of ~₹50 Lakhs for licensees. Technical support and demonstrations are provided.



Functionalities

- Converts solid seaweed residue into refined κ-carrageenan for use as emulsifier, thickener, and gelling agent
- Achieves high yield (25–30% w.r.t. dry seaweed granules) with a simple, scalable process
- Enables domestic production to reduce foreign exchange outflow
- Supports commercial-scale operations with batch demonstrations (~2.5 kg refined carrageenan per batch)

Key Features

High-yield – Produces 25–30% κ-carrageenan from dry seaweed granules

Commercial viable - Licensed to industry with revenue potential of ~₹50 Lakhs

Supported – Includes demos, tech docs, and six months' technical support

Implementation Overview

No	7	20
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR - Central Salt & Marine Chemicals Research Institute (CSMCRI), G B Marg Waghawadi Road, Bhavnagar, Gujarat, 364001

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Department of Science and Technology (DST)

Sal (*Shorea robusta*) leaf plate and bowl making machine

Overview

The semi-automatic Sal (*Shorea robusta*) leaf plate-making machine transforms Sal leaves into eco-friendly plates and bowls at 1,000–1,250 units/hour. It is energy-efficient, user-friendly, and low-maintenance. Multiple variants are available with different die configurations. Training is provided, covering all operational and maintenance details.



Functionalities

- Produces plates and bowls efficiently from Sal leaves
- Reduces reliance on plastic products
- Ensures energy-efficient and low-maintenance operation
- Supports multiple die configurations for varied production needs

Key Features

Versatile – Available in single and double die variants for plates and bowls

Efficient – Produces up to 1,250 units per hour with low energy use

Supported – Training provided covering all operational and maintenance details

Implementation Overview

100	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

Contact Details

SCAN HERE FOR MORE

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Indian Council of Agricultural Research (ICAR)

Integrated Agri–Aqua–Livestock Farming Model for Coastal Brackishwater Systems

Overview

Integrated agri-aqua poultry and goat farming in brackish water aquaculture is a sustainable livelihood model for coastal communities. This system treats fish as the primary component, while poultry and goats contribute nutrient-rich waste that serves as natural fertiliser, reducing feed costs by 60–70%. The integrated approach enhances resource utilisation, increases employment opportunities, and strengthens the skills and knowledge of Self-Help Groups (SHGs), promoting socio-economic development in coastal areas.



Functionalities

- Optimises use of farm resources by integrating fish, poultry, and goats
- Reduces feed costs for fish through animal waste as natural fertilizer
- Generates employment and enhances income for smallholder coastal farmers
- Supports SHG formation, skill development, and community-based livelihood improvement

Key Features

Integrated Farming Model – Combines fish, poultry, and goats for higher efficiency

Cost-Effective – Animal waste fertilizes ponds, cutting feed use by 70%

Livelihood– Provides employment, capacity building, and income enhancement for coastal communities and SHGs

Implementation Overview

Yes	9	30
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute of Brackishwater Aquaculture, 75, Santhome High Road, Chennai, Tamil Nadu, 600028

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Indian Council of Agricultural Research (ICAR)

Three-Tier Open Brackishwater Cage Farming Model for Sustainable Asian Seabass Production

Overview

ICAR-CIBA has developed a unique three-tier seabass cage farming system encompassing nursery rearing, pre-grow out, and grow-out phases. This low-volume, intensive approach requires minimal or no land area, making it suitable for small-scale coastal fisher communities. The system has the potential to enhance income, promote sustainable aquaculture, and contribute to India's Blue Revolution and blue economy initiatives.



Functionalities

- Provides an efficient, land-saving method for seabass production
- Suitable for small-scale coastal fisherfolk as a livelihood option
- Supports intensive aquaculture in open brackishwater resources
- Enhances income and productivity

Key Features

3

Three-tier system – Nursery, pre-grow out, and grow-out phases for optimized production

Land-efficient approach – Requires minimal or no land, ideal for coastal areas

Income and economy boost – Enhances fisherfolk earnings and supports the Blue Economy vision

Implementation Overview

Yes	9	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Central Institute of Brackishwater Aquaculture, 75, Santhome High Road, Chennai, Tamil Nadu, 600028

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Indian Council of Agricultural Research (ICAR)

Bale Pressing Unit for Uniform, High-Quality FCV Tobacco Baling

Overview

The Central Tobacco Research Institute has developed a Bale Pressing Unit to produce compact, uniform Flue Cured Virginia (FCV) tobacco bales, reducing labour and time compared to manual methods used in Andhra Pradesh and Karnataka. This system improves handling and market readiness. Comprehensive post-installation support is provided.



Functionalities

- Produces uniform and compact bales for efficient storage and transport
- Reduces drudgery, labour, and time compared to manual methods
- Maintains leaf quality, ensuring better market price
- Provides user support for installation, maintenance, and upgrades

Key Features

Application – Designed for FCV tobacco in Andhra Pradesh and Karnataka

Efficiency – Faster and less labour-intensive than manual baling

Quality – Ensures uniform bale size with desired height for market readiness

Implementation Overview

42	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Central Tobacco Research Institute,
Director,
Rajamahendravaram,
Andhra Pradesh, 533105

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Ministry of Micro, Small, and Medium Enterprises

Solar-Powered Pottery Wheel for Artisan Empowerment

Overview

The solar-powered pottery wheel reduces production costs and enhances productivity for pottery artisans by providing an energy-efficient, reliable, and user-friendly alternative to traditional wheels. Distributed nationwide under the *Kumhar Sashaktikaran* programme, it supports skill development, machine upscaling, design improvement, and integration into government livelihood schemes to sustainably boost artisan incomes.



Functionalities

- Promotes cost-efficient pottery production
- Supports technical skill development for artisans
- Facilitates upscaling of machinery and production processes
- Enhances product design and material usage

Key Features

Income-Enhancing – Reduces production costs for artisans

Technical Guidance – Provides know-how on quality and process improvement

Scheme-Integrated – Supports inclusion under government programs

Implementation Overview

No	8	15
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Mahatma Gandhi Institute for Rural Industrialization(MGIRI), Wardha, Maharashtra, 442001

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Ministry of Micro, Small, and Medium Enterprises

Blunger Technology for Efficient Clay Processing in Pottery Craft

Overview

The Blunger is a mechanized clay-mixing technology designed to reduce production costs and drudgery for pottery artisans. Implemented nationwide under the MSME/KVIC *Kumhar Sashaktikaran* programme, it delivers uniform clay preparation and higher productivity. Available in both solar and AC versions, it supports quality improvement, machine upscaling, and linkage to government schemes.



Functionalities

- Promotes cost reduction in pottery production
- Provides technical knowledge for artisans
- Supports quality and design improvement
- Facilitates inclusion under government schemes

Key Features

Dual-Powered – Operates on both Solar and AC systems

Income-Enhancing – Reduces production cost and boosts artisan earnings

Scheme-Linked – Distributed via *Kumhar Sashaktikaran* program by MSME/KVIC

Implementation Overview

No	8	20
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Mahatma Gandhi Institute for Rural Industrialization(MGIRI), Wardha, Maharashtra, 442001

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Office of the PSA to the Government of India

Sustainable Lab-Reproduced Metal Coloring Technique for Bidriware

Overview

This technology replicates the traditional Bidar fort clay-sand essential for Bidriware's iconic black–silver finish using a lab-treated nitrogenous compound. Developed by RuTAG IIT-Madras, this innovation preserves the heritage craft, ensures uninterrupted production, and safeguards artisan livelihoods. The technology enables sustainable, heritage-compliant metal coloring with consistent quality. Six-month training and handholding support are available.



Functionalities

- Preserves traditional Bidriware craftsmanship through lab-based sand reproduction
- Supports artisans' livelihoods by enabling consistent production
- Facilitates skill transfer and capacity building via training and demonstrations
- Promotes heritage craft sustainability and cultural conservation

Key Features

Heritage Preservation – sustainable alternative to original Bidar fort sand

Artisanal Support – Enhances livelihoods and ensures craft continuity

Stable and reproducible - enabling high-quality Bidriware production

Implementation Overview

Yes	6	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Rural Technology Action Group, 2nd Floor, ICSR Building, IIT Madras, Chennai, Tamil Nadu, 600036

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Office of the PSA to the Government of India

Jointless Glass Bangles Making Furnace

Overview

The technology enhances the traditional jointless glass bangle craft in Unch village, Rajasthan, by improving the furnace, seating arrangement, and tools, resulting in safer working conditions, fuel savings, and better productivity. Post-commercialisation support is available through RuTAG IIT Delhi.



Functionalities

- Improves energy efficiency and reduces fuel consumption
- Enhances artisans' comfort and ergonomics
- Increases productivity and quality of bangles
- Promotes sustainable and safe working conditions

Key Features

Furnace – Commercial ceramic fibre insulated with chimney-damper

Ergonomics – Modified seating arrangement and improved tools

Supported – Post-commercialisation guidance and technical support provided

Implementation Overview

Yes	7	15
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Delhi, RuTAG Lab, Block-II, Room No. 247, Department of Mechanical Engineering, New Delhi, 110016

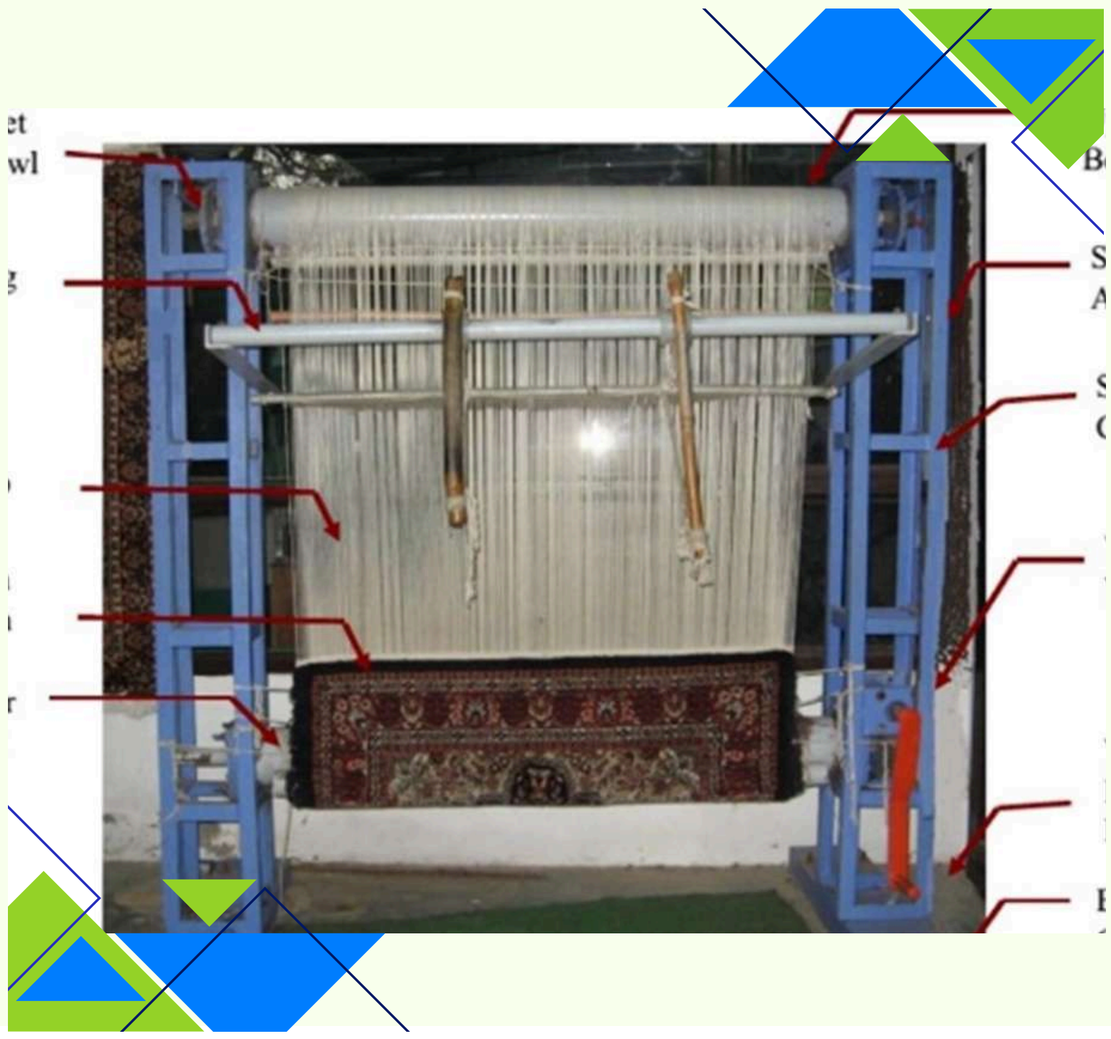
Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Office of the PSA to the Government of India

Metallic Loom for Carpet Weaving

Overview

The metallic loom for carpet weaving modernises the traditional process with a durable, low-maintenance design that improves efficiency, productivity, and quality. Supported by governmental and field agencies, it empowers individual weavers and clusters. Post-commercialisation support is available through RuTAG, IIT Delhi.



Functionalities

- Enhances weaving productivity and efficiency
- Provides higher tension for superior weaving quality
- Simplifies operation with user-friendly mechanisms
- Promotes sustainable livelihoods for weavers

Key Features

Beams – Seamless tube beams for higher weaving tension

Mechanism – Worm and gear mechanism for easy tensioning

Supported – Post-commercialisation guidance and technical support provided

Implementation Overview

200	8	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Delhi, RuTAG Lab, Block-II, Room No. 247, Department of Mechanical Engineering, New Delhi, 110016

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Office of the PSA to the Government of India

Mechanized Roller for Felt Making

Overview

This technology modernises the traditional craft of felt-making, a key cottage industry in Jammu & Kashmir, Uttarakhand, and Rajasthan. Replacing labour-intensive foot-beating with roller machines reduces physical strain, enables women's participation, and revives sustainable livelihoods. Technical and training support are provided.



Functionalities

- Reduces labour intensity in felt-making
- Promotes women's participation in the craft
- Enhances productivity and product diversity
- Revives traditional livelihoods with modern methods

Key Features

Innovative – Roller machines replace foot-beating wool processing

Inclusive – Women artisans can easily operate the machines

Supported – Technical support and live demonstration training offered

Implementation Overview

7
Deployed

9
Technology Readiness Level (TRL)

10
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG, IIT Roorkee,
Department of Hydro and Renewable Energy (HRED), Roorkee,
Uttarakhand, 247667

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Office of the PSA to the Government of India

Variable Speed Solar Based Bageshwari Wool Charkha

Overview

The Modified Bageshwari Wool Charkha modernises traditional foot-operated spinning wheels in Uttarakhand and Himachal Pradesh. By integrating solar power, motorisation, and ergonomic features, it enhances yarn quality, reduces physical strain, and boosts productivity. Technical and training support are provided.



Functionalities

- Improves yarn uniformity and quality
- Reduces manual strain during spinning
- Enhances productivity and efficiency
- Supports artisans with training and troubleshooting

Key Features

Innovative – Solar panel, motor, and rechargeable battery integration

Ergonomic – Lightweight, easy-to-assemble, and user-friendly design

Supported – Technical support and live demonstration training offered

Implementation Overview

9	9	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG, IIT Roorkee,
Department of Hydro and Renewable Energy (HRED), Roorkee,
Haridwar, 247667

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Office of the PSA to the Government of India

Electrically Operated Sectional Warping Machine

Overview

The Electrically Operated Sectional Warping Machine, developed by RuTAG IIT Guwahati, modernises the traditional warping process by reducing time, labour, and space requirements. Designed with mild steel and dual operation modes, it offers durability and easy maintenance. Technical, maintenance, and handholding support are provided.



Functionalities

- Improves efficiency in sectional warping
- Reduces dependency on large open spaces and weather
- Enhances productivity with dual operation mode
- Supports artisans with technical guidance and training

Key Features

Innovative – Electrically operated machine for efficient warping

Compact – Requires small area and ensures easy maintenance

Supported – Technical, maintenance, and handholding support provided

Implementation Overview

Yes	6	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Guwahati, Technology Complex, Guwahati, Assam, 781039

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Office of the PSA to the Government of India

Pirn winding machine

Overview

The Pirn Winding Machine, developed by RuTAG IIT Guwahati, addresses the inefficiencies and drudgery of traditional winding methods. Built with mild steel and featuring dual electric and pedal operation, it ensures uniform winding with higher productivity. Training, maintenance, and handholding support are provided.



Functionalities

- Enhances winding efficiency with higher output
- Reduces labour cost and physical drudgery
- Produces uniform yarn quality for weaving
- Supports artisans with technical guidance and training

Key Features

Productive – Winds 6 bobbins at a time, with a capacity of 60 per hour

Versatile – Dual operating system with electrical and pedal-driven modes

Supported – Training, maintenance, and handholding support provided

Implementation Overview

10	6	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Guwahati, Technology Complex, Guwahati, Assam, 781039

Sector: **Non Farm**
Category : **Artisan, Handloom & Cultural Livelihoods**

Office of the PSA to the Government of India

Hank to Bobbin Winding Machine

Overview

Developed by RuTAG IIT Guwahati, the Hank to Bobbin Winding Machine offers a low-cost, efficient solution for the textile and handloom sector. Designed for easy transport, even in hilly areas, it greatly increases productivity compared to manual methods. Technical and handholding support are provided.



Functionalities

- Improves efficiency by replacing slow manual winding
- Reduces time and effort in bobbin preparation
- Enhances productivity for handloom and textile operations
- Supports artisans with training and technical assistance

Key Features

Productive – Winds 6 bobbins simultaneously, handling 10 hanks at once

Efficient – Achieves 10 kg/day capacity versus 500–750 g manually

Supported – Technical support and handholding guidance provided

Implementation Overview

60	6	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

RuTAG IIT Guwahati,
Technology Complex,
Guwahati, Assam,
781039

FOOD PROCESSING & STORAGE SYSTEMS

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Protein & fibre enriched cereal and millet bar technology

Overview

CSIR-IHBT has developed low-cost, protein and fibre enriched cereal bars to address malnutrition in children and women. Made from 100% natural multigrain ingredients -millets, pulses, fruits, and honey, the bars offer high nutrition with low sugar and saturated fat, supporting commercial scalability and public health nutrition programs.



Functionalities

- Delivers balanced nutrition in snack format
- Combines millets, pulses, fruit, and honey
- Supports low-sugar, high-fiber consumption habits
- Enables market-driven product upgrades and innovation

Key Features

Wholesome – High protein and fiber content

Natural – Preservative-free and nutrient-rich ingredients

Adaptive – Modified per market requirements

Implementation Overview

Yes	8	6
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-IHBT Palampur, Coordinator Business Development & Marketing Unit, CSIR-IHBT, Palampur Post Box. No. 06, Himachal Pradesh, 176061

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Technology for developing a Multigrain High Protein Mix

Overview

A low-cost technology for commercial production of a protein-rich beverage mix addressing protein and energy malnutrition. Multipurpose for smoothies, beverages, or as a fortifying ingredient in breads and ready-to-eat foods. Post-commercialisation support ensures market-driven modifications and continued relevance.



Functionalities

- Addresses protein and energy malnutrition
- Enables versatile use across food formats
- Fortifies bakery and ready-to-eat products
- Supports market-driven product refinement processes

Key Features

Affordable – Low-cost production technology

Versatile – Multipurpose use in drinks and food products

Nutrient-Dense – High protein content for health

Implementation Overview

Yes	8	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-IHBT Palampur, Coordinator Business Development & Marketing Unit, CSIR-IHBT, Palampur Post Box. No. 06, Himachal Pradesh, 176061

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Herbal Hair Oil Formulation Technology

Overview

Herbal oil, or infused oil, is produced by steeping medicinal herbs in carrier oils over weeks or months, allowing the extraction of scent, color, and healing properties. Versatile in use for health, wellness, and cosmetic applications. Post-commercialization support ensures continued optimization in line with market demand.



Functionalities

- Extracts therapeutic properties from medicinal herbs
- Provides multipurpose wellness and cosmetic applications
- Enhances product value through natural infusion
- Allows adaptive product development for markets

Key Features

Natural – Derived from herbs and carrier oils

Therapeutic – Retains healing properties of herbs

Versatile – Suitable for multiple uses

Implementation Overview

Yes	8	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-IHBT Palampur, Coordinator Business Development & Marketing Unit, CSIR-IHBT, Palampur Post Box. No. 06, Himachal Pradesh, 176061

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Kokum Jelly candy

Overview

Kokum jelly candy is developed from natural extracts of dried kokum rind, offering a distinctive acidic flavor and stable natural color without synthetic additives. As a healthy, energy-rich confection, it caters to growing consumer demand for natural products, especially among children. Technical and consultancy-based support can be provided as required.



Functionalities

- Utilizes natural kokum rind extract base
- Eliminates synthetic colorants and acids
- Offers energy-rich confectionery alternative
- Promotes safe and child-friendly consumption

Key Features

Natural – Free from artificial additives

Nutritive – Energy-dense, child-preferred sweet

Safe – Stable color, non-irritant composition

Implementation Overview

Yes	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CFTRI, Head, Technology Transfer & Business Development Department, Mysore, Karnataka, 570020

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Finger millet (Ragi) based Murrukku mix

Overview

This ready-mix formulation enables easy preparation of murukku and similar crisp snack foods from blended cereal and pulse flours. This ready-to-fry crisp snack is made from cooked dough comprising cereal flours like ragi, rice, maize, sorghum, wheat, or sago, individually or blended with pulse flours, salt, and spices. Once deep-fried, it becomes a crispy wafer-like meal adjunct. With a shelf life of six months, it supports small-scale, low-investment processing and local entrepreneurship.



Functionalities

- Produces crisp ready-to-fry wafers
- Utilizes multi-grain and pulse blends
- Supports small-scale manual production systems
- Offers versatile meal accompaniment option

Key Features

Affordable – Low-capital production setup

Versatile – Multi-grain ingredient adaptability

Tasty – Traditional flavor and crisp texture

Implementation Overview

Yes	8	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CFTRI, Head, Technology Transfer & Business Development Department, Mysore, Karnataka, 570020

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Ready Mix: Chakli

Overview

This ready-mix formulation for Chakli, a popular South Indian fried snack, offers a convenient, hygienic, and nutritionally rich solution for home and commercial use. Developed by CSIR–CFTRI, Mysuru, the technology ensures uniform quality, extended shelf life, and ease of preparation and is ideal for urban families and small-scale enterprises.



Functionalities

- Provides convenience by reducing preparation time and effort
- Preserves traditional South Indian taste in an easy-to-use form
- Enhances daily menus with a wholesome and nutritious option
- Expands applicability across diverse regional food preferences

Key Features

Convenient – Reduces preparation time and effort

Nutritious – Rich and wholesome traditional snack

Supported – Technical and consultancy support available

Implementation Overview

7	8	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CFTRI, Head, Technology Transfer & Business Development Department, Mysore, Karnataka, 570020

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Process for the preparation of raw banana powder (unripe)

Overview

This technology enables the production of raw banana powder from mature, unripe bananas such as Cavendish, Nendran, Elakki, Poovan, and Rasabale. The process involves washing, peeling, pretreatment, and dehydration under controlled conditions to yield a carbohydrate-rich, sugar-free powder suitable for food formulations and year-round industrial applications.



Functionalities

- Converts raw banana into shelf-stable powder
- Provides a rich source of carbohydrates free from sugars
- Extends the utility of bananas beyond fresh consumption
- Supports food processing and value addition

Key Features

Nutrient-rich – Sugar-free, carbohydrate-rich powder

Versatile – Suitable for multiple food applications

Supported – Technical and consultancy support available

Implementation Overview

Yes	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CFTRI, Head, Technology Transfer & Business Development Department, Mysore, Karnataka, 570020

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Mustard/Rape seed integrated processing

Overview

An integrated mustard and rapeseed processing technology developed by CSIR–CFTRI enables production of high-quality, pungent edible mustard oil and bright yellow, low-fibre mustard cake suitable for food and poultry feed. The process improves Ghani efficiency, reduces power use by 40%, and enhances oil colour, flavour, and nutritional value.



Functionalities

- Extracts oil from mustard and rapeseed using traditional ghanis or expellers
- Crushes seeds without de-hulling, retaining hull portions in the meal
- Produces superior edible mustard oil in respect of colour, flavour, lower FFA and high pungency in oil.
- Enhances productivity and energy efficiency

Key Features

Quality-focused – Reduces hull content, enhancing oil and meal quality

Efficient – Optimises processing for better product characteristics

Supported – Technical guidance and consultancy support available as needed

Implementation Overview

10	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CFTRI, Head, Technology Transfer & Business Development Department, Mysore, Karnataka, 570020

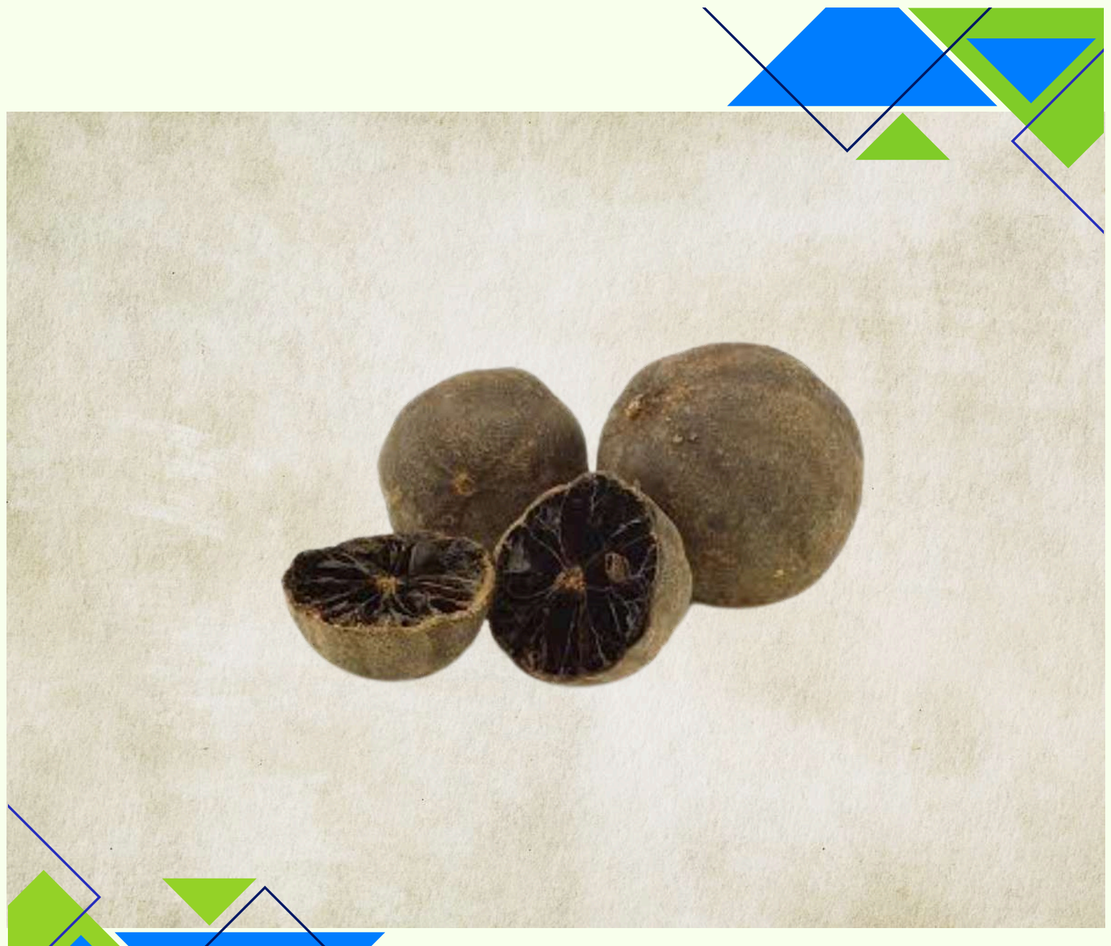
Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Dehydrated whole lime

Overview

This technology enables the production of dehydrated whole lime (black lime), a value-added product with strong demand in Middle Eastern markets. Prepared by hot-air drying pre-treated lime fruits, the product retains rich vitamin C content, offers cooling and therapeutic properties, and has a shelf life exceeding six months.



Functionalities

- Provides a rich natural source of vitamin C and fruit acids
- Serves as a flavoring ingredient in rice dishes and lime-flavored tea
- Extends fruit shelf life and usability
- Offers medicinal benefits and cooling effects as a natural remedy

Key Features

High-value – Targets strong export demand, especially in Middle East markets

Versatile – Used in culinary dishes, beverages, and traditional remedies

Supported – Technical guidance and consultancy available as required

Implementation Overview

Yes	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CFTRI, Head, Technology Transfer & Business Development Department, Mysore, Karnataka, 570020

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Fruit syrups & squashes

Overview

This technology enables the production of fruit squashes, crushes, cordials, and syrups from tropical, subtropical, and temperate fruits such as mango, orange, pineapple, and lime. Using locally available raw materials, the process ensures nutritious, flavourful beverages with high market potential, particularly during summer months, and supports small-scale food enterprises.



Functionalities

- Facilitates fruit pulp and juice processing
- Offers a wide variety of squashes, crushes, cordials, and syrups
- Utilizes locally available fruits and materials
- Supports year-round market demand due to nutritional quality and taste

Key Features

Versatile – Covers squashes, syrups, and cordials across multiple flavours

High demand – Seasonal peak in summer, but many flavors sell year-round

Supported – Technical guidance and consultancy available on requirement

Implementation Overview

33	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CFTRI, Head, Technology Transfer & Business Development Department, Mysore, Karnataka, 570020

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Dehydration of Bitter Gourd without pre-treatment

Overview

This technology enables the dehydration of bitter gourd (*Momordica charantia*) into cubes, rings, or slices for extended shelf life and off-season use. Rich in vitamins C and A, the dehydrated product retains nutritional value, reduces storage bulk, and has strong domestic and export potential. Technical consultancy support is available.



Functionalities

- Preserves nutritional and medicinal properties
- Dehydrates bitter gourd for long shelf life
- Supports medicinal and culinary applications across the Asian subcontinent
- Reduces post-harvest and storage losses

Key Features

Nutrient-rich – High in vitamin C with additional vitamins and minerals

Off-season availability – Preserved slices maintain usability year-round

Supported – Technical and consultancy support available on request

Implementation Overview

Yes	8	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CFTRI, Head, Technology Transfer & Business Development Department, Mysore, Karnataka, 570020

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Fruit jams & jellies: preparation

Overview

This technology standardizes the production of jams, jellies, marmalades, and jam slices using fruits like pineapple, mango, guava, grape, and orange. The products retain natural flavour, colour, and nutrients while offering extended shelf life. They are rich in carbohydrates, vitamins, and minerals, serving as versatile spreads and confectionery items.



Functionalities

- Provides a nutrient-rich, ready-to-consume confectionery product
- Enhances the appeal of fruit products through colour, shape, and flavour customisation
- Serves as a versatile snack or meal accompaniment
- Offers long shelf-life and year-round availability

Key Features

Nutrient-rich – Contains carbs, vitamins, minerals, acids, polyphenols, and fibre

Versatile – Suitable as a snack, dessert, or meal accompaniment

Supported – Technical and consultancy-based assistance available as required

Implementation Overview

48
Deployed

9
Technology Readiness Level (TRL)

2
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CFTRI, Head, Technology Transfer & Business Development Department, Mysore, Karnataka, 570020

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Dehydrated Drumstick Powder

Overview

Drumstick (*Moringa oleifera Lam*), also known as horseradish tree, is a popular tropical vegetable with a distinct palatable taste and high glutamic acid content. Drumstick powder serves as an energy food and a natural flavoring agent, especially for enhancing the taste of chicken and other non-vegetarian dishes. Technical and consultancy support is available as required.



Functionalities

- Provides a distinct, palatable taste as a popular tropical vegetable
- Supplies glutamic acid, making it one of the richest vegetable sources
- Serves as an energy-giving food in regular diets
- Enhances flavor in non-vegetarian dishes when used as a powder

Key Features

Nutrient-rich – High in glutamic acid, providing energy and taste enhancement

Versatile – Usable as a flavoring agent in various dishes

Supported – Technical and consultancy support available as per need

Implementation Overview

Yes	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CFTRI, Head, Technology Transfer & Business Development Department, Mysore, Karnataka, 570020

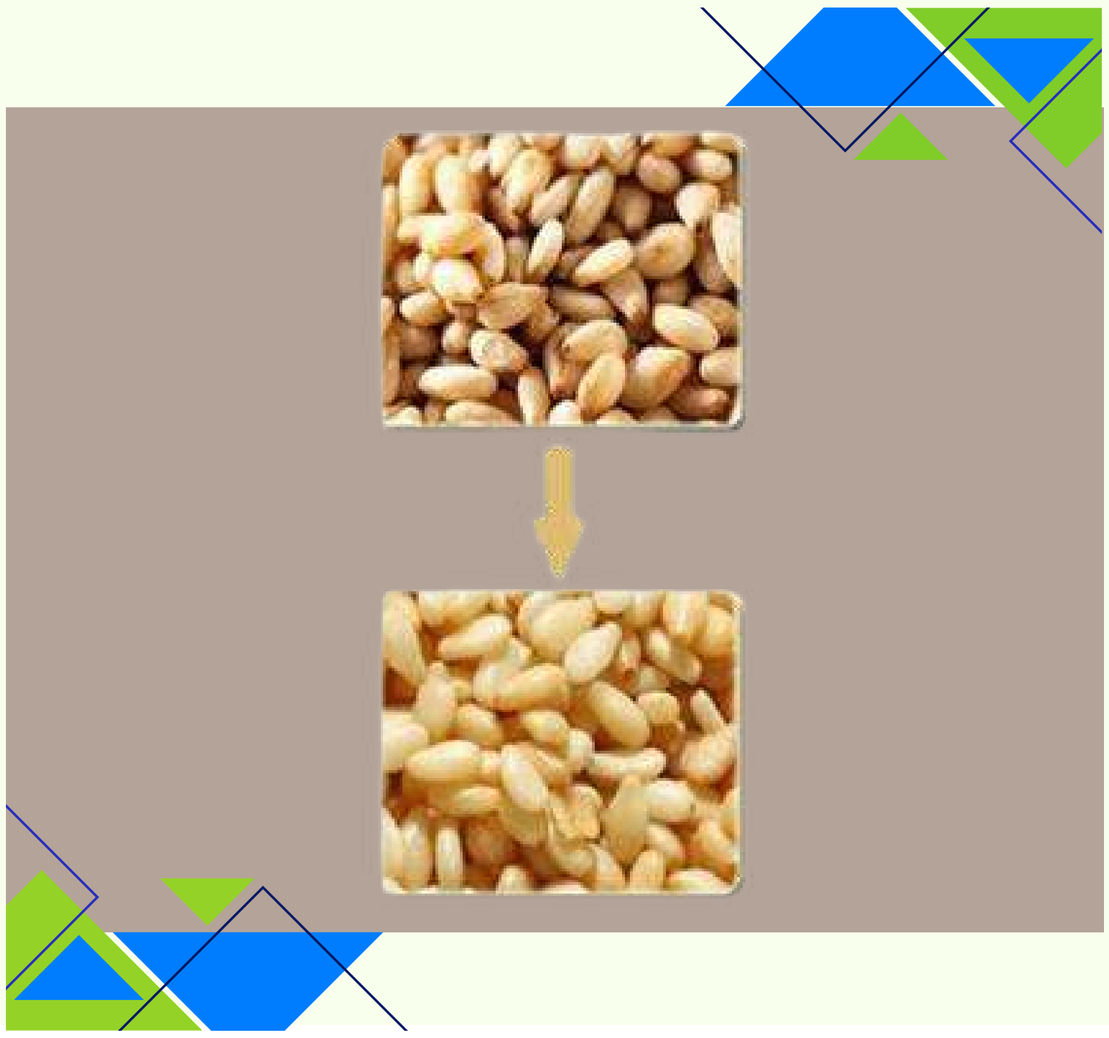
Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Sesame: dehulling (wet process)

Overview

CSIR-CFTRI has developed a breakthrough technology for mechanically dehulled and hygienically processed sesame kernels with uniform colour and high culinary and confectionery value. Technical support and consultancy-based assistance are available as required.



Functionalities

- Provides uniformly colored, hygienically processed sesame kernels
- Enhances usability in cookery and confectionery applications
- Standardises processing to meet national and international quality standards
- Ensures high acceptability and consistent product quality

Key Features

Standardised – Technology conforms to global quality and acceptability standards

Uniform – Dehulled kernels with consistent colour and improved utility

Supported – Technical support and consultancy assistance available

Implementation Overview

9	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Production of Papaya and Carrot Tuti-Fruiti

Overview

CFTRI's standardized technology enables the preparation of fruit and vegetable preserves, candied, glazed, and crystallized products under controlled conditions ensuring superior quality and long shelf life. Using mature fruits or vegetables cooked in syrup, products like papaya or carrot tuti-fruti offer wholesome, attractive, and nutritious options for confectionery and food industries.



Functionalities

- Uses matured fruits/vegetables such as apple, mango, papaya, and berry varieties
- Extends shelf life through controlled processing
- Ensures at least 68% soluble solids for quality preservation
- Produces attractive preserves, candies, and glazed products

Key Features

Variety – Suitable for apple, amla, papaya, mango, strawberry, and more

Supported – Technical support and consultancy available as required

Standards – Achieves 68% soluble solids ensuring safe preservation

Implementation Overview

29	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Dry dehulling of sesame seed

Overview

CFTRI has developed a breakthrough technology for mechanically dehulled sesame kernels with uniform colour, suitable for cookery and confectionery. The process ensures hygienic standards, meeting national and international quality benchmarks. Technical support and consultancy are provided as required.



Functionalities

- Provides mechanically dehulled and hygienically processed sesame kernels
- Ensures a continuous process without manual handling or yard drying
- Protects seeds from contamination by birds, rodents, and other sources
- Implements a semi-dry process requiring minimal water and eliminating effluent disposal

Key Features

Quality – Uniform colour kernels suitable for diverse applications

Standards – Conforms to national and international benchmarks

Supported – Technical support and consultancy available as required

Implementation Overview

20	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Vegetable dehydration : Green chilllies

Overview

CSIR-CFTRI has developed a vegetable dehydration technology for green chillies and other perishables, enabling safe and economical preservation during abundance for off-season use. Dehydrated fruits and vegetables remain stable in suitable packaging and will find good place in Indian homes. Technical support and consultancy assistance are available as required.



Functionalities

- Reduces water content and water activity to ensure product stability
- Preserves perishable foods for availability in off-seasons and shortages
- Facilitates packaging and shipping in suitable containers
- Supports applications in fast foods, soups, noodles, instant mixes, and salads

Key Features

Economical – Cost-effective method for food preservation

Versatile – Wide use in convenience and traditional foods

Supported – Backed by technical and consultancy support

Implementation Overview

8	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Malted weaning food

Overview

Malted Weaning Food is an innovative, malted cereal–pulse formulation offering a natural, appealing flavor distinct from conventional milk-based weaning foods. Its low hot-paste viscosity enhances intake per feed, improving infant nutrition and palatability. The product presents a competitive, nutritious alternative for infants transitioning to semi-solid foods.



Functionalities

- Provides a nutritious cereal–pulse mix suitable for infants
- Enhances infant feed intake efficiency
- Offers a natural flavour alternative to bland milk cereal foods
- Competes effectively with existing weaning food products

Key Features

Nutritious – Rich in essential nutrients for infant growth

Palatable – Natural flavour improves acceptance among babies

Supported – Backed with technical guidance and consultancy

Implementation Overview

45	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Vegetable dehydration: Peas

Overview

CSIR-CFTRI has developed a vegetable dehydration technology for peas and other perishables, enabling safe and economical preservation during abundance for
off-season use. Dehydrated fruits and vegetables remain stable in suitable packaging and will find good place in Indian homes. Technical support and consultancy assistance are available as required.



Functionalities

- Reduces water content and water activity to ensure product stability
- Preserves perishable foods for availability in off-seasons and shortages
- Facilitates packaging and shipping in suitable containers
- Supports applications in fast foods, soups, noodles, instant mixes, and salads

Key Features

Economical – Cost-effective method for food preservation

Versatile – Wide use in convenience and traditional foods

Supported – Backed by technical and consultancy support

Implementation Overview

Yes	8	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Vegetable dehydration: Potato

Overview

CSIR-CFTRI has developed a vegetable dehydration technology for potatoes and other perishables, enabling safe and economical preservation during abundance for off-season use. Dehydrated fruits and vegetables remain stable in suitable packaging and will find good place in Indian homes. Technical support and consultancy assistance are available as required.



Functionalities

- Reduces water content and water activity to ensure product stability
- Preserves perishable foods for availability in off-seasons and shortages
- Facilitates packaging and shipping in suitable containers
- Supports applications in fast foods, soups, noodles, instant mixes, and salads

Key Features

Economical – Cost-effective method for food preservation

Versatile – Wide use in convenience and traditional foods

Supported – Backed by technical and consultancy support

Implementation Overview

Yes	8	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Convenience flour from Ragi suitable for stiff porridge

Overview

This convenience flour technology enables quick preparation of traditional foods such as stiff porridge (mudde), rotis, and similar products. The flour retains its nutritional and sensory quality when stored in cool, dry conditions and packed hygienically, offering a ready-to-use, time-saving option for households and food service providers.



Functionalities

- Enables instant porridge and roti preparation
- Retains flavor, texture, and nutrition
- Preserves hygienic, nutritional, and organoleptic qualities during packaging
- Maintains product quality through proper storage in cool and dry conditions

Key Features

Versatile – Suitable for porridge and roti preparations

Hygienic – Retains nutritional and sensory qualities

Supported – Backed by technical and consultancy support

Implementation Overview

7	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Fruit dehydration: Grapes

Overview

CSIR-CFTRI has developed a fruit dehydration technology for grapes and other perishables, enabling safe and economical preservation during abundance for off-season use. Dehydrated fruits and vegetables remain stable in suitable packaging and will find good place in Indian homes. Technical support and consultancy assistance are available as required.



Functionalities

- Reduces water content and water activity to ensure product stability
- Preserves perishable foods for availability in off-seasons and shortages
- Facilitates packaging and shipping in suitable containers
- Supports applications in fast foods, soups, noodles, instant mixes, and salads

Key Features

Economical – Cost-effective method for food preservation

Versatile – Wide use in convenience and traditional foods

Supported – Backed by technical and consultancy support

Implementation Overview

18	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Faster curing of vanilla beans

Overview

The technology for Faster Curing of Vanilla Beans enhances processing efficiency while retaining quality. Vanilla is the world's most popular flavour and the second costliest spice after saffron. It is widely used in the food, perfumery, and pharmaceutical industries. ISO 5565 classifies its commercial forms as whole pods, cut pods, bulk vanilla, and powder derived from dried pods.



Functionalities

- Provides natural flavouring for food, perfumery, and pharmaceutical industries
- Offers multiple commercial forms, including whole pods, cut pods, bulk vanilla, and powder
- Preserves authentic aroma and taste when processed into vanilla powder
- Serves as a high-value spice with widespread culinary and industrial applications

Key Features

Premium – Second most expensive spice after saffron

Versatile – Available in pods, cut pods, bulk, and powder

Supported – Technical and consultancy support offered

Implementation Overview

Yes	7	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Vegetable dehydration: Onion

Overview

This technology focuses on the dehydration of onions to extend their shelf life and ensure year-round availability. By reducing moisture content under controlled conditions, dehydrated onion retains flavor, color, and nutrients. The product is lightweight, easy to store, and ideal for use in instant foods, soups, and spice mixes.



Functionalities

- Reduces water content and water activity to ensure product stability
- Preserves perishable foods for availability in off-seasons and shortages
- Facilitates packaging and shipping in suitable containers
- Supports applications in fast foods, soups, noodles, instant mixes, and salads

Key Features

Economical – Cost-effective method for food preservation

Versatile – Wide use in convenience and traditional foods

Supported – Backed by technical and consultancy support

Implementation Overview

5	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Fruit dehydration: Banana

Overview

This technology enables the dehydration of bananas to preserve them during peak seasons for off-season use. By reducing water content and activity, the product remains stable and safe for long-term storage. Dehydrated banana products serve as key ingredients in instant foods, snacks, desserts, and bakery formulations, ensuring minimal wastage and year-round availability.



Functionalities

- Reduces water content and water activity to ensure product stability
- Preserves perishable foods for availability in off-seasons and shortages
- Facilitates packaging and shipping in suitable containers
- Supports applications in fast foods, soups, noodles, instant mixes, and salads

Key Features

Economical – Cost-effective method for food preservation

Versatile – Wide use in convenience and traditional foods

Supported – Backed by technical and consultancy support

Implementation Overview

12	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Coffee flakes based mouth freshner

Overview

This coffee-based mouth freshener is formulated with natural ingredients that refresh the mouth, stimulate saliva glands, and enhance oral cleanliness. The slow-chewing process activates a catalytic effect, allowing the blend to neutralize odor-causing compounds during digestion, offering a long-lasting fresh breath experience while supporting digestive health naturally.



Functionalities

- Generates a pleasant taste and fresh feeling in the mouth
- Stimulates saliva glands to naturally flush and clean the mouth
- Activates a catalytic effect during chewing to enhance ingredient interaction
- Reacts with odour-forming agents during digestion to reduce undesirable smells

Key Features

Natural – Cleans mouth using saliva activation

Pleasant – Generates a fresh and enjoyable taste

Supported – Technical and consultancy support available

Implementation Overview

Yes	8	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Spice Mix: Puliogare

Overview

CSIR–CFTRI has developed ready-mix technologies for traditional South Indian dishes like puliogare, bisibele bhath, sambar, and rasam. These hygienically processed mixes ensure standard quality, long shelf life, and ease of preparation, offering consumers authentic taste, convenience, and time savings while preserving the cultural essence of home-cooked meals.



Functionalities

- Provides hygienic ready mixes of traditional South Indian foods
- Ensures standard quality and uniform taste across batches
- Reduces cooking effort while preserving traditional flavours
- Extends shelf life for wider household and regional use

Key Features

Convenient – Saves time and reduces household drudgery

Hygienic – Maintains safe, uniform quality

Supported – Technical and consultancy support available

Implementation Overview

Yes	8	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Process know-how for dehydration of coriander foliage

Overview

The technology for dehydration of coriander foliage enhances the utility of *Coriandrum sativum L.* from the Apiaceae family, known for its aromatic leaves, fruits, and stems. Dehydrated leaves retain flavour for chutneys, curries, sauces, and soups, while oil quality depends on variety, storage, and processing. Technical and consultancy support is available.



Functionalities

- Provides a pleasant aromatic flavour for culinary applications
- Supplies edible leaves, seeds, and stems for diverse food preparations
- Enhances taste in curries, sauces, soups, and chutneys
- Maintains volatile oil content influenced by proper storage, handling, and processing

Key Features

Aromatic – Pleasant aroma from leaves, fruits, and stems

Versatile – Seeds and leaves for wide culinary uses

Supported – Technical and consultancy support available

Implementation Overview

Yes	8	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Preparation of Ready to Cook Multi grain whole mix for drink/ porridge

Overview

The Multigrain whole mix is a ready-to-cook powder made from whole grains, pulses, millets, and nuts. It can be prepared as a drink or porridge and serves as an excellent source of protein, fibre, vitamins, and minerals. The product has a shelf life of 4–6 months with technical and consultancy support available.



Functionalities

- Provides a ready-to-cook powder from whole grains, pulses, and nuts
- Facilitates the preparation of nutritious drinks or porridges
- Supplies protein, fiber, vitamins, and minerals in a single mix
- Maintains a shelf life of 4 to 6 months for convenient storage and use

Key Features

Nutritious – Rich in protein, fibre, vitamins, and minerals

Convenient – Ready-to-cook mix for quick preparation

Supported – Technical and consultancy support available

Implementation Overview

19	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Pickles & chutneys: preparation

Overview

Pickles and chutneys are traditional, spiced, unfermented preparations that preserve fruits and vegetables through salting, oil curing, or vinegar treatment. CSIR–CFTRI has standardized the process for consistent taste, long shelf life, and hygiene, supporting small-scale and industrial production while maintaining authentic Indian flavor and culinary diversity.



Functionalities

- Preserves fruits and vegetables through salting, acidifying, and oil-based curing
- Provides a spiced, flavorful addition to Indian meals
- Maintains traditional methods while allowing variation in taste and spice composition
- Enhances the shelf life and usability of seasonal produce for regular consumption

Key Features

Traditional – Rooted in Indian culinary practices

Flavourful – Enriched with diverse spices and methods

Supported – Backed by technical and consultancy support

Implementation Overview

95	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Prawn pickle

Overview

The prawn pickle is an emulsion-based formulation containing fried prawns blended with acid, salt, spices, condiments, and sugar, preserved in covering oil. Developed by CSIR–CFTRI, it has a proven shelf life of over one year without added preservatives and has received high consumer acceptance for taste and quality.



Functionalities

- Preserves fried prawns in an emulsion of acid, salt, spices, condiments, and sugar
- Utilises covering oil to maintain product quality and stability
- Provides a shelf life of over one year at room temperature without external preservatives
- Ensures consumer acceptability through taste and quality trials

Key Features

Preservative-free – No external preservatives used

Long-lasting – Shelf life of over one year at room temperature

Supported – Backed by technical and consultancy support

Implementation Overview

Yes	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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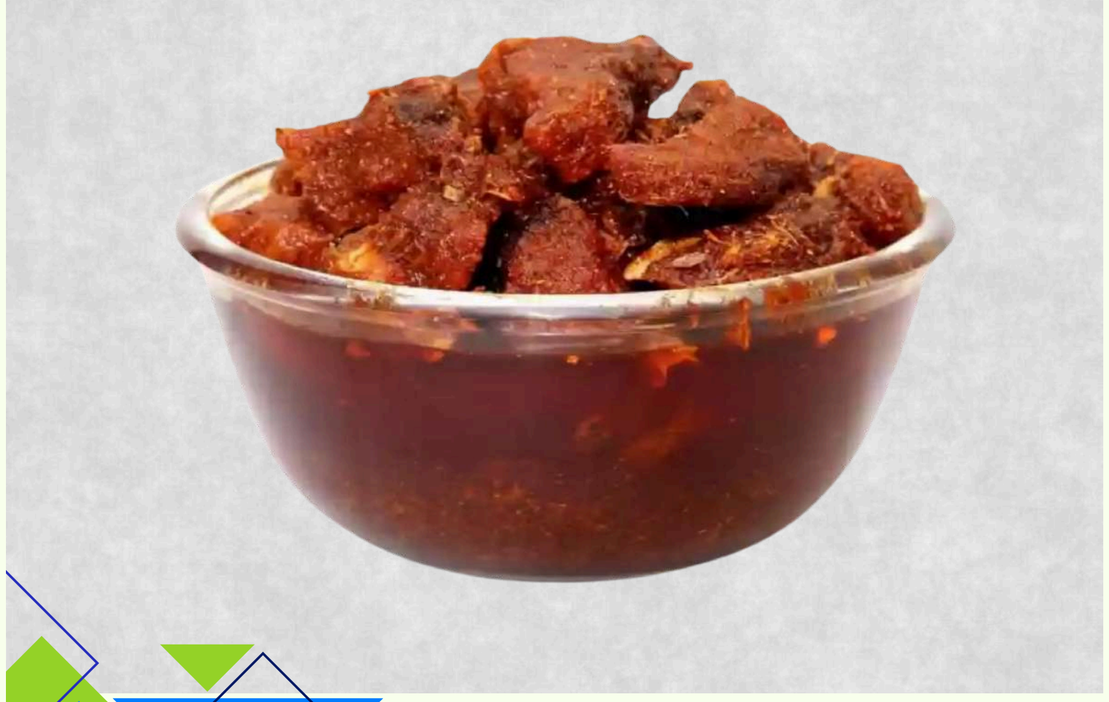
Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Mutton pickle

Overview

CSIR-CFTRI has developed Mutton Pickle as a preservative-free food adjunct with acidic pH, low moisture, and spicy flavour, suitable for pairing with bland foods like rice, and roti. With low moisture and an acidic pH of 4.2, it requires no preservatives and maintains over one year of shelf life. The product suits hotels, restaurants, and student messes, offering strong market potential.



Functionalities

- Serves as a flavorful food adjunct with roti, rice and similar foods
- Provides a salty and spicy taste with low moisture and acidic pH
- Maintains preservative-free formulation while ensuring safety
- Offers a tested shelf life of over one year at room temperature

Key Features

Long-lasting – Shelf life of over one year at room temperature

Preservative-free – Developed without external preservatives

Supported – Backed by technical and consultancy support

Implementation Overview

Yes	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Chikki with Moringa

Overview

CSIR-CFTRI has developed Moringa Chikki, a preservative-free ready-to-eat traditional sweet snack enriched with moringa leaf powder, wheat germ, sesame, sunflower seeds, and jaggery. It serves as an energy- and protein-rich snack suitable for school children and target groups, with technical and consultancy support provided.



Functionalities

- Provides a ready-to-eat sweet snack suitable for all age groups
- Supplies a concentrated source of energy and protein for children and adults
- Uses natural ingredients like debittered Moringa leaf powder, wheat germ, black sesame, and sunflower seeds
- Maintains a preservative-free formulation for healthy consumption

Key Features

Nutrient-rich – Enriched with moringa, wheat germ, sesame, and sunflower seeds

Preservative-free – Made using natural ingredients without added preservatives

Supported – Backed by technical and consultancy support

Implementation Overview

15	7	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Chikki /Nutra chikki (3 formulations)

Overview

CSIR-CFTRI has developed fortified Chikki, a ready-to-eat traditional sweet snack enriched with natural nutraceuticals to meet the growing demand for functional foods. It provides protein, carbohydrates, fats, energy, and essential health benefits, with technical and consultancy support available.



Functionalities

- Provides a traditional sweet snack rich in macronutrients
- Fortifies with natural nutraceuticals for added health benefits
- Delivers energy and the pleasure of sweetness to consumers
- Caters to health-conscious and nutritionally needy groups

Key Features

Nutrient-rich – Contains protein, carbohydrates, and fats

Functional – Fortified with essential nutraceuticals

Supported – Backed by technical and consultancy support

Implementation Overview

15	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Chicken Pickle

Overview

CSIR–CFTRI, Mysuru, has developed and commercialized a hygienic chicken pickle processing technology featuring fried chicken in an emulsion of acid, salt, spices, and condiments. With no external preservatives, it offers a shelf life of over one year at room temperature, ensuring safety, flavor, and commercial viability for diverse market applications.



Functionalities

- Provides a ready-to-use chicken-based pickle
- Ensures over one-year shelf life without preservatives
- Offers consumer-validated taste and acceptability
- Maintains safety and stability through covering oil

Key Features

Consistency – Emulsion texture with fried chicken in a spiced aqueous medium

Preservation – Shelf life of over one year without external preservatives

Supported – Technical and consultancy services available

Implementation Overview

5
Deployed

8
Technology Readiness Level (TRL)

2
No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Rural based biotechnological production of *Spirulina*

Overview

CSIR-CFTRI has developed a standardized technology for the cultivation and processing of *Spirulina*, a nutrient-rich blue-green algae recognized globally as a natural health food. The process ensures hygienic large-scale production of *Spirulina* powder and tablets, rich in proteins, vitamins, and minerals—ideal for addressing malnutrition, boosting immunity, and promoting overall wellness.



Functionalities

- Provides a natural source of proteins, vitamins, and minerals
- Supports multiple health benefits including improved anemia recovery, diabetes management, wound healing, and cholesterol reduction
- Serves as a safe, non-habit-forming health and slimming food
- Offers convenient consumption in tablet form for busy individuals

Key Features

Nutrition – Rich in proteins, vitamins and minerals

Safety – Natural, side-effect free and non-habit forming

Supported – Technical and consultancy services offered as required

Implementation Overview

19
Deployed

9
Technology Readiness Level (TRL)

2
No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Formulation for Immunity modulation

Overview

CSIR-IHBT Palampur has developed an indigenous technology for producing a Herbal Formulation for Immunity Modulation, suitable for intake through food and nutraceutical formulations. The innovation is supported with post-commercialisation modifications based on market demand and industry feedback to ensure long-term relevance and optimisation.



Functionalities

- Provides immunity modulation benefits
- Integrates easily with food and nutraceutical products
- Supports preventive healthcare and wellness
- Allows modification based on market and consumer needs.

Key Features

Application – Suitable for food, nutraceutical, and wellness formulations

Benefits – Boosts immunity, supports health, and suits various product formats

Supported – Post-commercialisation modifications and optimisation offered

Implementation Overview

Yes	8	6
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Contact Details

CSIR-IHBT Palampur, Coordinator Business Development & Marketing Unit, Post Box. No. 06, Palampur, Himachal Pradesh, 176061

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Nutra chikki with added *spirulina*

Overview

CSIR-CFTRI has developed a *Spirulina*-based Chikki, a nutritious and shelf-stable traditional sweet snack designed to combine taste with health benefits. Made from natural ingredients and fortified with *Spirulina*, a rich source of protein, vitamins, minerals, and omega-3 fatty acids it provides an affordable, ready-to-eat energy food suitable for all age groups.



Functionalities

- Provides a ready-to-eat traditional sweet snack with protein, carbohydrates, and fats
- Delivers essential nutraceuticals to health-conscious consumers
- Supplies energy and macronutrients while offering the pleasure of sweetness
- Serves as a functional food that can be fortified with natural health-benefiting compounds

Key Features

Nutrition – Rich in protein, carbohydrates, fats, and fortified nutraceuticals

Versatility – Consumed as a sweet snack or functional food

Supported – Technical and consultancy support offered based on requirement

Implementation Overview

39	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Iron and Zinc enriched *Spirulina* based bars

Overview

CSIR-IHBT Palampur has developed a peanut bar incorporating *Spirulina* for the fortification of iron and zinc. These products utilise different food matrices such as peanut, sesame, and cereals, and are designed to meet at least 20% of the recommended dietary allowances (RDA) of iron and zinc. Supported through post-commercialisation modifications to align with market demand and industry feedback.



Functionalities

- Fortifies ready-to-eat foods with iron and zinc using *Spirulina*
- Utilises diverse food matrices such as peanut, sesame, and cereals
- Provides at least 20% of the recommended dietary allowances (RDA) of iron and zinc
- Supports nutritional enhancement for health-conscious consumers

Key Features

Nutrition – Enriched with iron, zinc, proteins, and micronutrients from *Spirulina*

Innovation – Utilises different food matrices for broader consumer acceptance

Support – Post-commercialisation support and modifications based on market needs

Implementation Overview

Yes	8	6
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-IHBT Palampur, Coordinator Business Development & Marketing Unit, Post Box. No. 06, Palampur, Himachal Pradesh, 176061

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Ragi based papads

Overview

CSIR-CFTRI has developed Ragi Papad, a millet-based ready-to-fry crisp snack that promotes nutritious and traditional eating. Made primarily from finger millet (ragi) blended with other cereals and pulses, it offers a gluten-free, high-fiber, and calcium-rich alternative to conventional papads supporting India's millet movement and healthy snacking goals.



Functionalities

- Produces crispy wafer-like snacks from cereal and pulse flour blends
- Serves as a food adjunct to complement full meals
- Utilises deep-fat frying to achieve attractive texture and taste
- Supports small-scale production suitable for home-based or unorganised sector units

Key Features

Versatile – Can be made from ragi, rice, maize, sorghum, wheat, sago, and pulse flour blends

Attractive Texture – Deep-fat fried to a crisp, wafer-like product

Supported – Technical and consultancy support available based on requirements

Implementation Overview

8	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CFTRI, Head, Technology Transfer & Business Development Department, Mysore, Karnataka, 570020

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Council of Scientific & Industrial Research (CSIR)

Pulse based papads

Overview

Papad is a thin wafer-like snack made from legume flour, salt, khar, and spices, either toasted or deep-fried to a crispy texture. The technology supports semi- or fully-automatic production for small-scale and export-oriented manufacturers. Technical support and consultancy are provided based on requirements.



Functionalities

- Produces thin, crispy wafer-like snacks from legume flour dough
- Serves as a food adjunct to complement full meals
- Utilises toasting or deep-fat frying to achieve appealing texture and taste
- Supports semi- or fully-automatic production for small-scale and export-oriented manufacturers

Key Features

Flexible production – Suitable for home-scale, small, or medium industries

High-quality output – Ensures uniform crispiness and texture

Supported – Technical support and consultancy provided as per requirements

Implementation Overview

31	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CFTRI, Head, Technology Transfer & Business Development Department, Mysore, Karnataka, 570020

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Indian Council of Agricultural Research (ICAR)

Turmeric Spice-Mix Formulation for Instant, Bioavailable Functional Milk

Overview

ICAR–IISR, Kozhikode, has developed a novel spice mix formulation to prepare turmeric milk with enhanced solubility and bioavailability. Unlike traditional homemade preparations, this mix prevents insoluble sedimentation and improves the absorption of active ingredients, offering a more effective and convenient health drink.



Functionalities

- Enhances bioavailability of active ingredients such as curcumin and gingerols
- Prevents insoluble settlement during preparation
- Provides a convenient ready-to-use spice mix formulation
- Supports commercialization through technology demonstration and marketing assistance

Key Features

Novel Spice Mix – Developed with turmeric, ginger, and cinnamon extracts

Improved Solubility – Overcomes limitations of traditional turmeric milk

Health Benefits – Supports immunity against common cold, fever, and illness

Implementation Overview

Yes	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR-Indian Institute of Spices Research,
Marikunnu PO, Kozhikode,
Kerala, 673012

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Indian Council of Agricultural Research (ICAR)

Potato Daliya & Semolina: Nutrient-Dense Potato-Based Grain Alternatives

Overview

ICAR-CPRI has developed a processing technology to convert fresh or cold-stored potatoes including nutrient-rich red and purple-fleshed types into dehydrated products such as potato daliya, semolina, and flour. These cook like traditional wheat daliya/sooji, offer enhanced nutrition, require minimal processing, and maintain quality for up to nine months when properly stored.



Functionalities

- Converts nutritionally rich potatoes into porridge/daliya and semolina
- Suitable for fresh and cold-stored potatoes of any variety, age, or size
- Provides 9 months of shelf life under cool, dark, and dry conditions
- Offers a simple cooking method similar to wheat-based daliya/sooji

Key Features

Nutrient Dense – Red and purple potatoes processed with minimal nutrient loss

Versatile Usage – Applicable for both fresh and stored potatoes

Long Shelf Life – Up to 9 months when stored properly

Implementation Overview

Yes	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR Central Potato Research Institute
Shimla, Bemloe, Shimla,
Himachal Pradesh,
171001

Sector: **Non Farm**
Category : **Food Processing & Storage Systems**

Indian Council of Agricultural Research (ICAR)

Gluten-Free Potato Cookies: A Healthy, Fibre-Rich Snack Innovation

Overview

ICAR-CPRI has developed this technology to produce gluten-free cookies from whole potatoes, including the peel. These cookies are rich in fibre, potassium, and calcium, low in sodium, and suitable for all types of potatoes. This innovation reduces post-harvest losses while offering a new product for consumers, including celiac patients.



Functionalities

- Produces gluten-free cookies from whole potatoes
- Suitable for all types of potatoes and reduces post-harvest losses
- Provides nutritious benefits, being high in fibre, potassium, calcium, and low in sodium
- Provides a consumer-friendly option suitable for celiac patients and general consumption

Key Features

Gluten-Free – Safe for celiac patients

Nutrient Rich – High in fibre, potassium, calcium, and low in sodium

Versatile – Can be made from all types of potatoes

Implementation Overview

Yes	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

ICAR Central Potato Research Institute
Shimla, Bemloe, Shimla,
Himachal Pradesh, 171001

HEALTHCARE, EDUCATION & DIGITAL TECHNOLOGY

Sector: **Non Farm**
Category : **Healthcare, Education & Digital Technology**

Council of Scientific & Industrial Research (CSIR)

Mosquito repellent cream

Overview

The Herbal Mosquito Repellent Cream is a natural, plant-based formulation that effectively repels mosquitoes while being safe and gentle on the skin. Suitable for adults and children above two years, it offers emollient, non-irritant protection, making it ideal for outdoor use. Technical knowledge and support can be provided as needed.



Functionalities

- Repels mosquitoes using natural plant-based compounds
- Provides safe outdoor protection for adults and children above two years
- Offers an emollient effect that nourishes the skin
- Ensures a non-irritant application suitable for regular use

Key Features

Natural – 100% plant-based ingredients

Safe – Non-irritant and suitable for children

Supported – Technical knowledge and guidance provided

Implementation Overview

Yes	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Institute of Medicinal and Aromatic Plants, CSIR-Cimap, near Kukrail Picnic Spot Road, Lucknow, Uttar Pradesh, 226015

Sector: **Non Farm**
Category : **Healthcare, Education & Digital Technology**

Council of Scientific & Industrial Research (CSIR)

Naari – Infection preventing sanitary napkins

Overview

Naari is a scientifically developed, low-cost medicated sanitary napkin with natural aroma, aloe vera, natural absorbent, and essential oils. It protects against bacterial infection, maintains personal hygiene, relieves menstrual odour, and is biodegradable. Technical support is provided if required.



Functionalities

- Prevents infections through natural antibacterial action
- Minimizes menstrual odour using natural aroma
- Provides soothing comfort with aloe vera
- Promotes hygiene through biodegradable materials

Key Features

Safe – Non-toxic and side-effect free

Comfortable – Fresh, soothing, and skin-friendly

Eco-Friendly – Fully biodegradable composition

Implementation Overview

Yes	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Institute of Medicinal and Aromatic Plants, CSIR-Cimap, near Kukrail Picnic Spot Road, Lucknow, Uttar Pradesh, 226015

Sector: **Non Farm**
Category : **Healthcare, Education & Digital Technology**

Council of Scientific & Industrial Research (CSIR)

FloMop – Aromatic insect repellent floor mopping formulation

Overview

FloMop is a herbal, essential oil-based floor cleaning formulation that removes dirt while repelling common household insects. Phenol-free and eco-friendly, it leaves a refreshing lemon aroma and helps prevent diseases caused by insects. Safe, easy to use, and concentrated for efficiency. Technical support is available for deployment.



Functionalities

- Cleans surfaces and repels household insects
- Prevents insect-borne illness and contamination
- Provides fresh lemon fragrance post-cleaning
- Offers safe, concentrated eco-friendly formulation

Key Features

Natural – Essential oil-based herbal formulation

Safe – Phenol-free and environment-friendly

Effective – Cleans and protects simultaneously

Implementation Overview

Yes	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Institute of Medicinal and Aromatic Plants, CSIR-Cimap, near Kukrail Picnic Spot Road, Lucknow, Uttar Pradesh, 226015

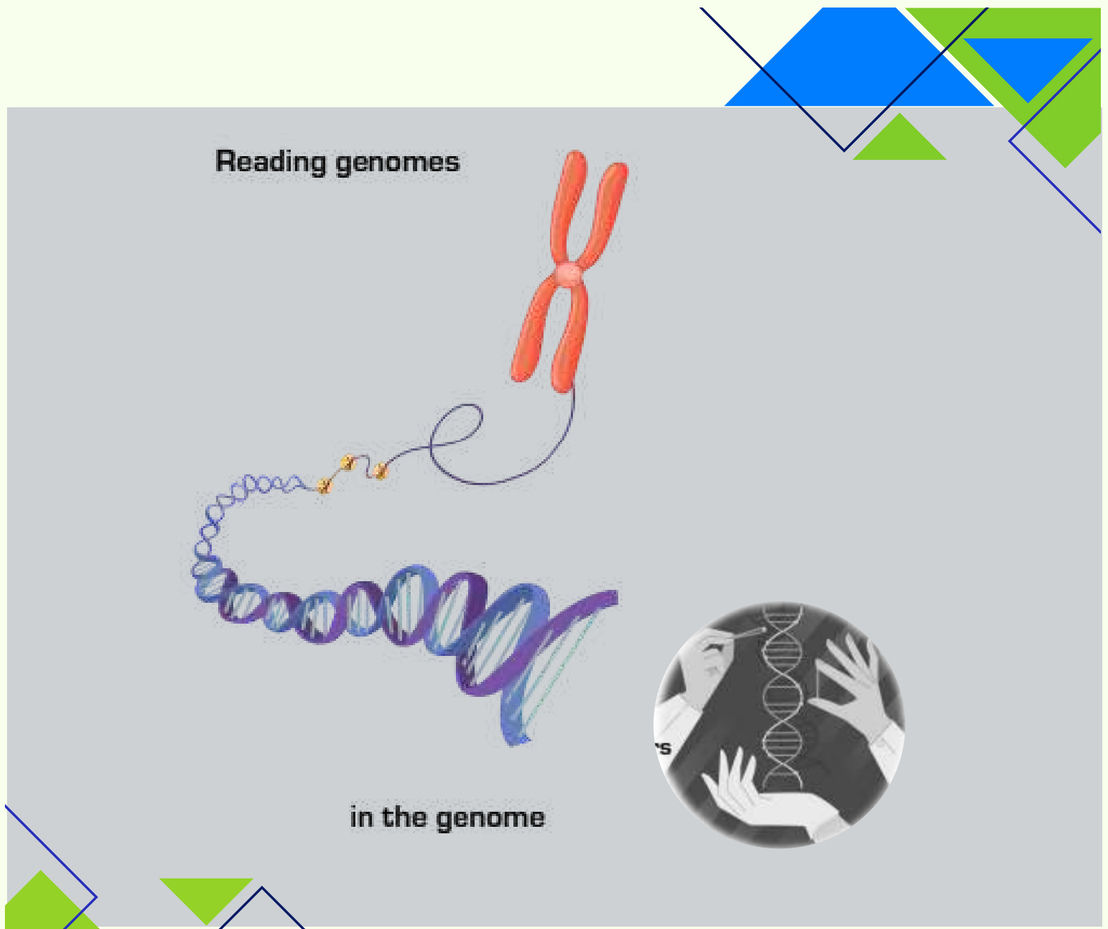
Sector: **Non Farm**
Category : **Healthcare, Education & Digital Technology**

Council of Scientific & Industrial Research (CSIR)

CRISPR Case based genome editing for sickle cell anemia

Overview

CSIR-IGIB, under the leadership of Drs. Souvik Maiti and Debojyoti Chakraborty have developed an indigenous CRISPR-based system for correcting the Sickle Cell Disease (SCD) mutation. Funded by the Ministry of Tribal Affairs and DST, the technology is ready for clinical trials at AIIMS, New Delhi, with technical support provided for clinical-grade material production and licensing.



Functionalities

- Corrects the SCD-causing mutation at the genetic level
- Enables production of clinical-grade gene therapy material
- Supports technology transfer to commercial entities
- Facilitates safe gene therapy development and regulatory compliance

Key Features

Patented – US Patent 11,970,699 B2 protects the technology

Clinical-ready – Suitable for Phase 1 trials in humans

Supported – Technical guidance available for production and licensing

Implementation Overview

No	6	30
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR Institute of Genomics and Integrative Biology, New Delhi, 110025

Sector: **Non Farm**
Category : **Healthcare, Education & Digital Technology**

Department of Biotechnology (DBT)

"Kisan Kavach" An anti-pesticide protective suit for farmers

Overview

Kisan Kavach is a protective suit developed to safeguard farmers from pesticide exposure during spraying operations. Made from a specialized anti-pesticide fabric, it neutralizes harmful chemicals upon contact while remaining breathable, washable, and reusable. Designed for comfort and ease of use, it requires no special training and ensures farmer safety.



Functionalities

- Protects farmers from toxic pesticide exposure through skin and inhalation
- Deactivates a wide range of pesticides and insecticides upon contact
- Provides breathable, comfortable, washable, and reusable protective wear
- Reduces pesticide-induced toxicity and health risks for agricultural workers

Key Features

Protective – Prevents direct contact with toxic pesticides

User-friendly – Worn like regular clothing without special training

Supported – Post-commercialisation 24x7 guidance provided by Sepio Health Pvt. Ltd

Implementation Overview

200
Deployed

9
Technology Readiness Level (TRL)

1
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Institute for Stem Cell Science and Regenerative Medicine (inStem) and Sepio Health Pvt Ltd, inStem, UAS-GKVK Post, Bengaluru, Karnataka, 560065

Sector: **Non Farm**
Category : **Healthcare, Education & Digital Technology**

Department of Biotechnology (DBT)

An antigen-based lateral flow assay for rapid screening of JEV and method thereof

Overview

Japanese Encephalitis Virus (JEV) is a mosquito-borne infection and a leading cause of viral encephalitis in Asia. To enable rapid and early detection, an antigen-based Lateral Flow Assay (LFA) has been developed, offering faster and more sensitive screening for JEV compared to existing commercial kits, aiding in timely diagnosis and intervention.



Functionalities

- Enables rapid screening for Japanese Encephalitis Virus (JEV) infection
- Provides sensitive detection of JEV antigens for early diagnosis
- Offers a user-friendly and point-of-care testing method
- Improves diagnostic accuracy compared to other commercial assay kits

Key Features

Rapid – Provides quick results for timely screening

Sensitive – Detects low levels of JEV antigen with high accuracy

Supported – Technology can be transferred for commercialisation and deployment

Implementation Overview

No	6	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

BRIC-National Institute of Animal Biotechnology, Hyderabad, NIAB, Opp. Journalist Colony, Near Gowlidoddy, Hyderabad, Telangana, 500032

Sector: **Non Farm**
Category : **Healthcare, Education & Digital Technology**

Department of Biotechnology (DBT)

Raman Spectroscopy for Piperine Estimation

Overview

A Raman spectroscopy–based technology has been developed to rapidly estimate piperine content in black pepper (Piper nigrum). The portable spectrometer enables non-destructive, field-level quality assessment by detecting molecular fingerprints at a 785 nm wavelength. Developed jointly by IBSD, Imphal, and Jadavpur University, it supports quality control and standardization in the spice industry.



Functionalities

- Estimates the piperine content in black pepper using Raman spectroscopy
- Captures and filters Raman scattered photons to obtain a sample-specific signature
- Provides qualitative and quantitative information without manual intervention
- Enables online analysis in the field or laboratory

Key Features

Portable – Instrument is compact for field or lab use

Accurate – Provides reliable measurement of piperine content

Supported – Technology transfer documents are available for commercialisation

Implementation Overview

No	6	90
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Institute of Bioresources and Sustainable Development
Imphal Takeypat, Imphal, Manipur, 795001

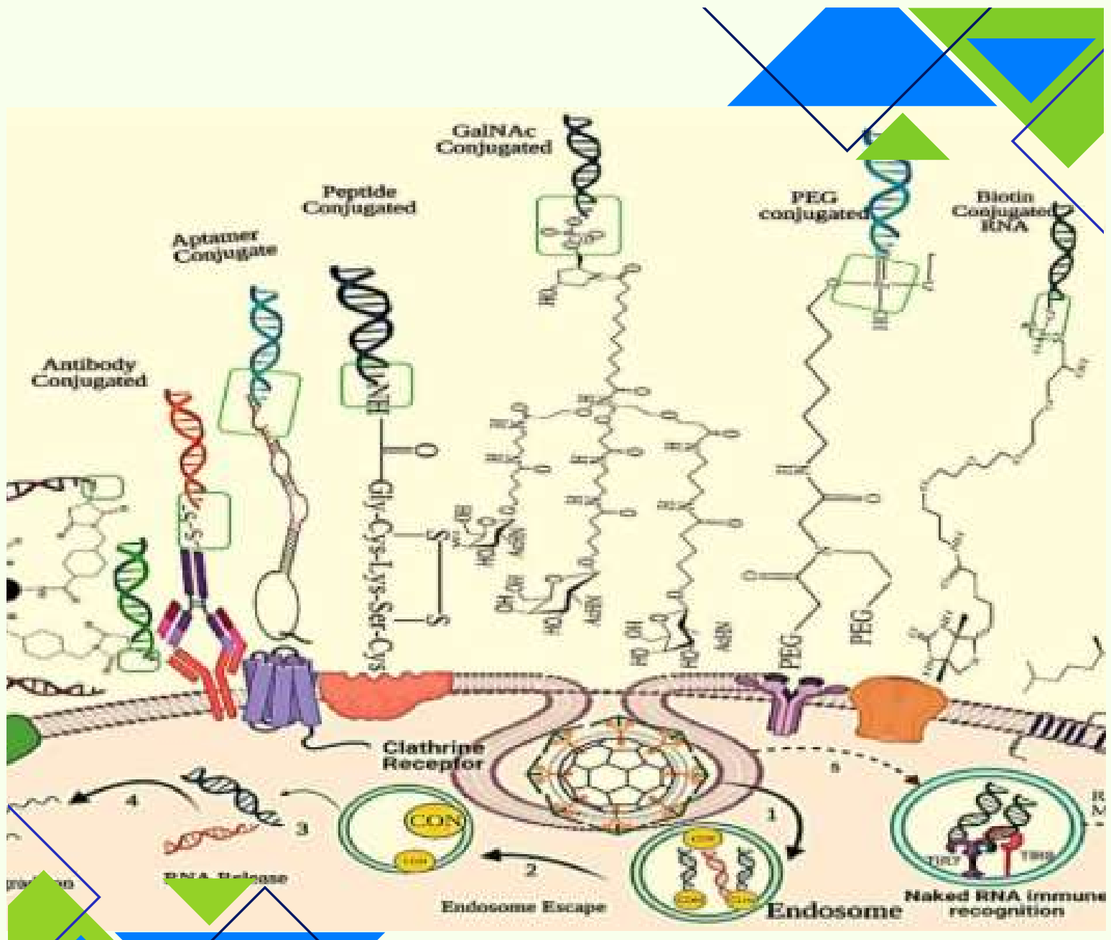
Sector: **Non Farm**
Category : **Healthcare, Education & Digital Technology**

Department of Science and Technology (DST)

Polymeric Nanomedicine for Cancer Therapy

Overview

This invention introduces chemically modified polymeric nanoparticles loaded with siRNA and chemotherapy drugs for aggressive cancer treatment. The modification enhances siRNA stability, while POL2RA silencing downregulates CDK, triggering cancer cell death. These multi-targeted nanoparticles show strong potential for advanced cancer therapy, warranting further clinical studies.



Functionalities

- Delivers siRNA and chemotherapy drugs to cancer cells
- Silences POL2RA and modulates cyclin-dependent kinase expression
- Induces programmed death of cancer cells
- Enhances serum stability of siRNA and provides multi-targeted therapy for advanced-stage cancer

Key Features

Advanced– Polymeric nanoparticles for targeted cancer therapy

Effective – Multi-targeting potential against POL2RA and CDK in aggressive cancers

Supported – Requires clinical studies for validation of safety and efficacy

Implementation Overview

No	6	30
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

School of Biomedical Engineering, Indian Institute of Technology (BHU), Varanasi, Uttar Pradesh, 221005

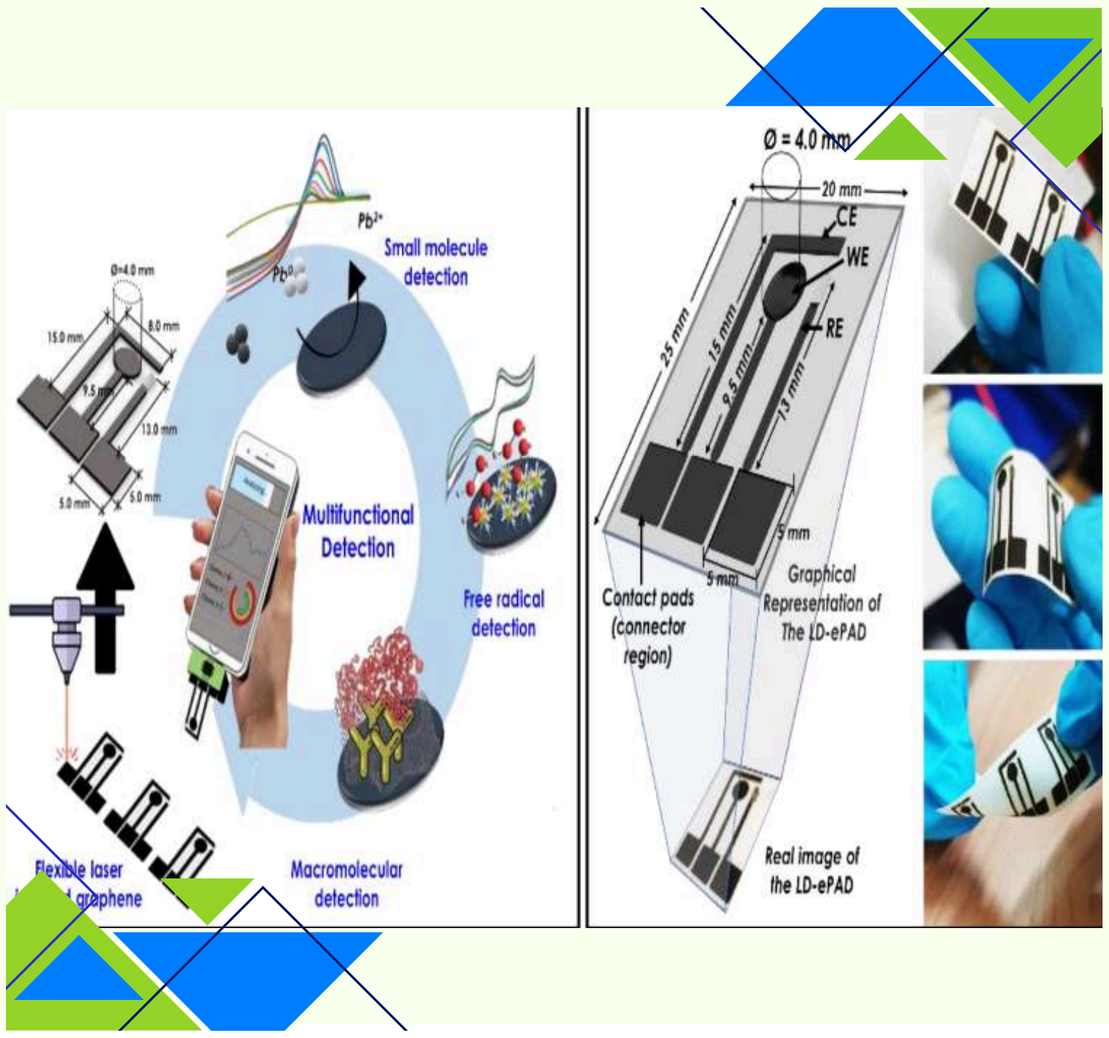
Sector: **Non Farm**
Category : **Healthcare, Education & Digital Technology**

Department of Science and Technology (DST)

Paper-based analytical devices for molecular sensing

Overview

This eco-friendly, cost-effective sensor is fabricated on a laser-engraved paper substrate with graphene-enhanced and gold nanospike electrodes. It detects small molecules, free radicals, and macromolecules with high sensitivity, offering stability and simplicity for diverse electrochemical applications.



Functionalities

- Detects small molecules, free radicals, and macromolecules with precision
- Ensures high sensitivity and low detection limits for various analytes
- Provides stable and reliable measurements across applications
- Promotes eco-friendly and cost-effective sensing solutions

Key Features

Innovative – Paper-based electrochemical sensor with enhanced electrodes

Sensitive – Achieves low detection limits for lead ions, H_2O_2, and ALP

Versatile – Suitable for diverse, eco-friendly electrochemical applications

Implementation Overview

100	6	15
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

School of Biochemical Engineering, Indian Institute of Technology (BHU), Varanasi, Uttar Pradesh, 221005

Sector: **Non Farm**
Category : **Healthcare, Education & Digital Technology**

Department of Science and Technology (DST)

Herbal medicine to arrest progression of senile immature cataract

Overview

The indigenous herbal eye drop, developed by NIF-India, halts cataract progression in elderly patients and delays surgery. Clinical trials confirmed its effectiveness over 180 days, with some post-treatment vision improvement. The drops effectively halted cataract progression, as confirmed by slit lamp photography (LOCS III grading system), preventing progression to mature or hypermature stages.



Functionalities

- Prevents progression of senile cataracts
- Improves vision in certain patients
- Reduces the need for surgical intervention
- Provides a non-invasive treatment alternative

Key Features

Clinically validated – Tested on 48 cataractous eyes using LOCS III grading

Effective formulation – Administered three times daily for 180 days

Supportive guidance – Post-treatment monitoring included in clinical trial

Implementation Overview

Yes	6	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

MANUFACTURING, INFRASTRUCTURE & MOBILITY SYSTEMS

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Council of Scientific & Industrial Research (CSIR)

Low-Disruption Underpass Construction Technology

Overview

CSIR-CRRI's patented Soil Nailing with Box Jacking Technique enables safe underpass construction below live traffic without disturbing existing structures. It minimises soil displacement and protects ground surfaces. Full technology training and on-site application support are available for adopters.



Functionalities

- Enables safe underpass construction beneath live rail/road traffic
- Minimises soil displacement and protects the ground surface
- Protects ground surfaces from structural damage
- Offers on-site technology training and support for implementation

Key Features

Patented – National and international protection

Safe – Reduces construction-related ground risks

Supported – Expert-led on-site implementation guidance

Implementation Overview

10	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Road Research Institute, New Delhi-110 025, Chief Scientist, Geotechnical Engineering Division.

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Council of Scientific & Industrial Research (CSIR)

Fragalyst – digital image analysis system for determination of blast fragmentation and in situ rock block sizes

Overview

Fragalyst, developed by CSIR-CIMFR and SciCom Pune, is a digital image analysis software for blast fragmentation and in-situ rock block size assessment. With unique features like image tilt calibration, automatic edge detection, and energy utilization estimation, it aids in optimal explosive selection and blast design. Over 40 licenses have been commercialized.



Functionalities

- Analyzes blast fragmentation using digital imaging
- Determines in situ rock block sizes
- Optimizes explosive selection and blast design
- Provides calibration and automatic edge detection

Key Features

Innovative – Tilt calibration and auto-edge detection

Established – 25 years of software evolution

Supported – Free installation, training, and upgrades

Implementation Overview

20	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Institute of Mining and Fuel Research, Nagpur, Maharashtra, 440001

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Council of Scientific & Industrial Research (CSIR)

Emergency Retrieval System for Power Lines (ERS)

Overview

CSIR-SERC has developed an indigenous Emergency Restoration System (ERS) for power transmission lines. In case of tower failure, ERS enables rapid power restoration via a bypass corridor until permanent repair. This “Make in India” and “Atmanirbhar Bharat” initiative also serves as an import substitute. Two patents have been filed in India, the USA, and Canada. The technology has been successfully licensed to M/s Advait Infratech Limited, Ahmedabad, with orders from POWERGRID for J&K and Ladakh.



Functionalities

- Enables temporary power transmission bypass
- Provides complete structural and material details
- Minimizes downtime and enhances reliability
- Assists efficient permanent restoration work

Key Features

Rapid Restoration – Quickly restores power in case of transmission line failure

Indigenous & Patented – Make in India technology with patents in India, USA, and Canada

Supported – Technical guidance and consultancy support available as needed

Implementation Overview

16
Deployed

9
Technology Readiness Level (TRL)

5
No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Structural Engineering Research Centre,
Chennai, Tamil Nadu, 600113

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Council of Scientific & Industrial Research (CSIR)

Medium Category Mob Control Vehicle with 7 modules

Overview

Developed by CSIR–CMERI, the Medium Category Mob Control Vehicle integrates seven advanced modules for efficient, non-lethal crowd management and surveillance. Equipped with tear gas systems, front shovel, and real-time stitched video monitoring, it enhances law enforcement capability, mobility, and operator safety during large-scale public control and emergency response operations.



Functionalities

- Enables safe and effective crowd control
- Integrates real-time surveillance and response systems
- Monitors operations with PTZ camera on telescopic mast and wide-angle stitched video
- Provides non-lethal and controlled dispersion tools

Key Features

Robust – 2.5-ton payload and troop carrying capacity

Integrated – Seven core technology modules for multipurpose functionality

Supported – Training, on-site assistance, and handholding post-licensing

Implementation Overview

No	6	60
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Mechanical Engineering Research Institute Durgapur,
Mahatma Gandhi Avenue,
Durgapur West Bengal,
713209

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Council of Scientific & Industrial Research (CSIR)

Ecofriendly Geopolymer Concrete Blocks

Overview

CSIR–SERC's geopolymer concrete (GPC) block technology enables the production of ambient temperature-cured building, paver, hollow, and lightweight blocks. The process provides a sustainable, cost-effective, and durable alternative to conventional cement blocks by utilizing industrial waste, conserving energy, and promoting eco-friendly "waste-to-wealth" construction solutions adaptable to different material sources.



Functionalities

- Produces building, paver, hollow, and lightweight blocks
- Utilises industrial wastes for sustainable block production
- Enhances structural efficiency, durability, and eco-friendliness
- Minimises reliance on energy-intensive conventional materials

Key Features

Sustainable – Converts industrial waste to eco-friendly blocks

Versatile – Suitable for multiple block applications

Supported – Fine-tuning and technical support during licensing

Implementation Overview

Yes	8	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Structural Engineering Research Centre (CSIR-SERC), Chennai, Principal Scientist, Advanced Materials Laboratory, Taramani , Tamil Nadu -600113

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Council of Scientific & Industrial Research (CSIR)

PatchFILL: The Pothole Repair Machine

Overview

CSIR-CRRI has developed a compact, low-cost Pothole Repair Machine using cold mix technology to provide efficient and sustainable road maintenance. This Made in India green innovation reduces import dependency, supports agencies like Ministry of Road Transport and Highways (MoRTH) and State Public Works Department (PWD), and aligns with the Clean India mission. Technology training and commercialisation support are provided.



Functionalities

- Repairs potholes efficiently using cold mix technology
- Reduces costs and time in highway maintenance
- Promotes mechanised road repair for durability
- Supports agencies through dissemination programs

Key Features

Affordable – Low-cost alternative to imported machines

Green – Sustainable technology aligned with Clean India mission

Supported – Training and commercialisation assistance available

Implementation Overview

Yes	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Road Research Institute, CSIR-CRRI, Mathura Road, Delhi, 110025

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Council of Scientific & Industrial Research (CSIR)

Textile reinforced concrete prototyping technology for non-corrosive construction applications

Overview

Textile Reinforced Concrete Prototyping (TRCPT) is an innovative construction technology using non-metallic reinforcement to produce non-corrosive, durable, and sustainable concrete products. It is applicable in residential, commercial, and refurbishment projects, offering advantages such as seepage-arresting liners, precast panels, boundary walls, and strengthening overlays.



Functionalities

- Develops non-corrosive concrete using textile reinforcement
- Supports construction of new structures and refurbishment of old structures
- Enables precast panels, seepage liners, and folded panels for diverse applications
- Strengthens concrete and masonry while offering advantages over conventional construction

Key Features

Durability – Non-metallic reinforcement ensures non-corrosive, long-lasting products

Versatile – Works in homes, businesses, and renovations

Support – Promotes technology awareness among policymakers and the construction sector.

Implementation Overview

6	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Structural Engineering Research Centre, Senior Principal Scientist, Chennai, Tamil Nadu, 600113

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Council of Scientific & Industrial Research (CSIR)

Energy efficient coke based brass and bell metal melting furnace

Overview

CSIR-NML has developed an eco-friendly, energy-efficient coke-based brass melting furnace. It reduces energy consumption, pollution, and operational costs while increasing productivity and artisan income. Technical support for deployment, operation, and maintenance is provided.



Functionalities

- Reduces energy consumption during brass melting
- Minimises atmospheric pollution and improves working conditions
- Enhances productivity and average daily income of artisans
- Allows easy operation with minimal changes to traditional practices

Key Features

Eco-friendly – reduces environmental impact and emissions

Energy-efficient – lowers fuel usage and operational cost

Supported – technical guidance provided for setup and operation

Implementation Overview

Yes	8	48
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-National Metallurgical Laboratory,
Jamshedpur,
Burmamines, Jharkhand,
831007

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Council of Scientific & Industrial Research (CSIR)

Anti-tarnishing lacquer for silver and copper based alloys

Overview

CSIR-NML developed an anti-tarnishing lacquer for copper alloys and silver that prevents blackening and corrosion. Durable and nontoxic, it resists water, acids, and alkalis. The coating passes 500 hours of salt spray test (ASTM B 117) and 72 hours of flower of sulfur test (ASTM B 809). Technical guidance on application, quality control, and efficiency evaluation is provided.



Functionalities

- Prevents tarnishing and corrosion of copper alloys and silver
- Provides durable resistance to water, acid, and alkali environments
- Allows easy application by spraying, brushing, or dipping
- Eliminates the need for post-treatment, like baking

Key Features

Nontoxic – Free from lead and cadmium

Fast-drying – Dries in 10 minutes without baking

Supported – Technical guidance for application and evaluation provided

Implementation Overview

Yes	8	24
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-National Metallurgical Laboratory,
Jamshedpur,
Burmamines, Jharkhand,
831007

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Council of Scientific & Industrial Research (CSIR)

Preparation of compost from animal hair waste

Overview

This technology converts over 35,000 tons of keratin-rich animal hair waste from India's tanning industry into nitrogen-rich keratin hydrolysate through biochemical hydrolysis. The hydrolysate acts as an organic supplement and biofertilizer, promoting soil fertility and crop yields. Training, demonstration, and troubleshooting support are provided.



Functionalities

- Converts keratin-rich animal hair waste into nitrogen-rich hydrolysate
- Enhances soil fertility with organic amino acids and peptides
- Promotes sustainable agriculture by boosting crop yields
- Reduces environmental pollution from leather industry waste

Key Features

Innovative – Biochemical hydrolysis converts animal hair waste into useful biofertilizer

Eco-friendly- Reduces environmental burden of tanning industry waste disposal

Supported – Training, demonstration, and troubleshooting services available

Implementation Overview

Yes	6	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Leather Research Institute, Senior Principal Scientist, Kanpur, Uttar Pradesh, 208010

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Council of Scientific & Industrial Research (CSIR)

Leathers and products from fish skin

Overview

CSIR–CLRI has developed a sustainable leather processing technology that converts marine and inland fish skins—previously discarded as by-products—into high-quality exotic leather. This innovation introduces eco-friendly tanning and finishing methods, creating durable, visually distinct materials suitable for fashion and upholstery industries. Training and technical support are provided for implementation.



Functionalities

- Transforms waste fish skin into usable leather
- Utilizes sustainable, low-impact tanning techniques
- Optimises panel development for scalable mass production
- Expands market opportunities for eco-friendly leather goods

Key Features

High Aesthetic Value – Distinctive natural grain design

Eco-friendly – Employs clean processes, minimising environmental impact

Supported– Training, demonstration, and troubleshooting provided

Implementation Overview

No	6	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Leather Research Institute, Senior Principal Scientist, Kanpur, Uttar Pradesh, 208010

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Council of Scientific & Industrial Research (CSIR)

Chicken feet leather and leather products

Overview

CSIR-Central Leather Research Institute has developed a cost-effective and commercially viable technology for processing leather from chicken foot skin, a poultry by-product. The technology ensures quality, durability, and affordability with minimal deviation from conventional methods. Training, demonstration, and troubleshooting support are provided.



Functionalities

- Converts poultry waste into exotic leather material
- Maintains required leather properties suitable for stitching
- Enables production of panels and finished leather products
- Reduces raw material costs through waste utilisation

Key Features

Raw material – Uses chicken feet skin, an abundant poultry by-product

Durable leather – Strong and reliable for footwear, handbags, and accessories

Supported– Training, demonstration, and troubleshooting provided

Implementation Overview

Yes	6	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Leather Research Institute, Senior Principal Scientist, Kanpur, Uttar Pradesh, 208010

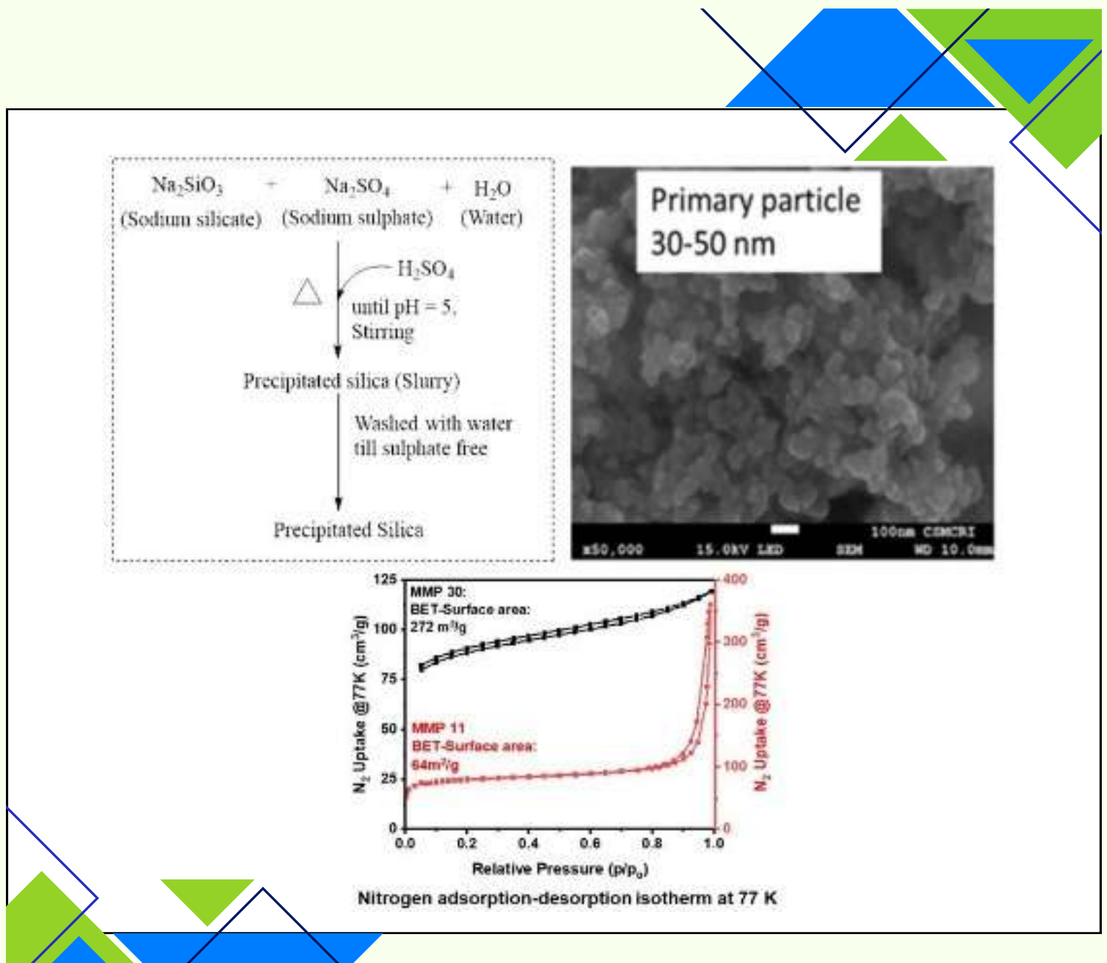
Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Council of Scientific & Industrial Research (CSIR)

Process for the preparation of finely divided precipitated silica for different applications

Overview

CSIR CSMCRI Bhavnagar has developed a robust and economically viable technology for producing precipitated silica with fine particle size and narrow distribution. The process, already licensed to multiple industries, uses cost-effective raw materials and waste streams. Training, demonstration, and technology transfer support are provided.



Nitrogen adsorption-desorption isotherm at 77 K

Functionalities

- Produces precipitated silica with over 75% particles finer than 10 µm
- Utilises sodium silicate solution, mineral acid, and silica sol under controlled conditions
- Replaces carbon black in the tyre industry
- Serves as a thixotropic agent in paints, cosmetics, and toothpaste

Key Features

Versatile – Used across polymer, tyre, paint, cosmetic, and agrochemical industries.

Feasibility – Employs waste and low-cost raw materials for competitive production

Supported – Process know-how, demonstration, licensing, and financial details provided

Implementation Overview

Yes	9	10
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR - Central Salt & Marine Chemicals Research Institute (CSMCRI), G B Marg Waghawadi Road, Bhavnagar, Gujarat, 364001

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Council of Scientific & Industrial Research (CSIR)

Flooring Wall Tiles, Bricks, & Paver Blocks Using Marble Waste

Overview

CSIR-CBRI has developed a process to recycle marble waste into sustainable building materials such as tiles, paver blocks, bricks, and AAC blocks. The process enhances concrete strength, durability, and density, with the products meeting Indian Standard Specifications. Technical training and support are provided for entrepreneurs and industry workers.



Functionalities

- Substitutes marble waste for fine and coarse aggregates to improve concrete performance
- Produces denser, stronger, and more durable construction mixtures
- Recycles marble slurry and solid waste into eco-friendly construction products
- Ensures compliance with Indian Standard Specifications for quality and safety

Key Features

Sustainable innovation – Utilises marble waste for eco-friendly construction

Versatile product range – Tiles, paver blocks, bricks, and AAC blocks developed

Supported– Hands-on training for entrepreneurs and technical support for industrial workers

Implementation Overview

No	8	10
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR- Central Building Research Institute, Roorkee, Advanced Concrete, Steel & Composites Group, Roorkee, Uttarakhand, 247667

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Council of Scientific & Industrial Research (CSIR)

Multi Copter Drones for Societal Applications

Overview

CSIR-NAL has developed multi-copter drone technology, including quadcopters, hexacopters, and octocopters for emergency medicine delivery, agricultural spraying, hyperspectral imaging, and geo-physical exploration. With payloads from 5–20 kg, a range up to 25 km, and an altitude under 500 m AGL, this technology is supported through licensing and deployment assistance.



Functionalities

- Delivers emergency medicines to remote and inaccessible areas
- Sprays pesticides and fertilisers in agricultural fields with precision
- Conducts hyperspectral imaging for crop and environmental monitoring
- Performs geo-physical exploration and data collection

Key Features

High versatility – Available in quadcopter, hexacopter, and octocopter variants

Robust – 5–20 kg payload, 25 km range, <500 m AGL operation

Supported – Technology licensing and deployment support provided by CSIR-NAL

Implementation Overview

No	9	14
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR - National Aerospace Laboratories Bengaluru, Head-Business Development Group, Project & Business Management Directorate (PBMD), PB. No: 1779, Kodihalli, HAL Airport Road, , Karnataka, 560017

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Department of Science and Technology (DST)

Autonomous Navigation Technologies for the Electric Buggy / Cart / Campus Shuttle

Overview

TiHAN has developed autonomous navigation technologies for electric buggies, carts, and campus shuttles, including drive-by-wire, mapping and waypoint generation, and integrated autonomous navigation with obstacle detection and emergency braking. Post-commercialisation support includes training, system integration, software updates, and customisation for seamless deployment.



Functionalities

- Enables autonomous driving for electric buggies, carts, and campus shuttles
- Generates mapping and waypoints for precise navigation
- Detects obstacles and applies autonomous emergency braking
- Integrates vehicle control signal generation with the navigation system

Key Features

Modular – Each technology functions independently for distinct applications

Advanced – Integrates autonomous navigation, obstacle sensing, and control

Supported – End-to-end post-commercialisation support for seamless deployment

Implementation Overview

Yes	9	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

TIHAN IITH, TIP Building, J Block, First Floor, Sangareddy, Telangana, 502284

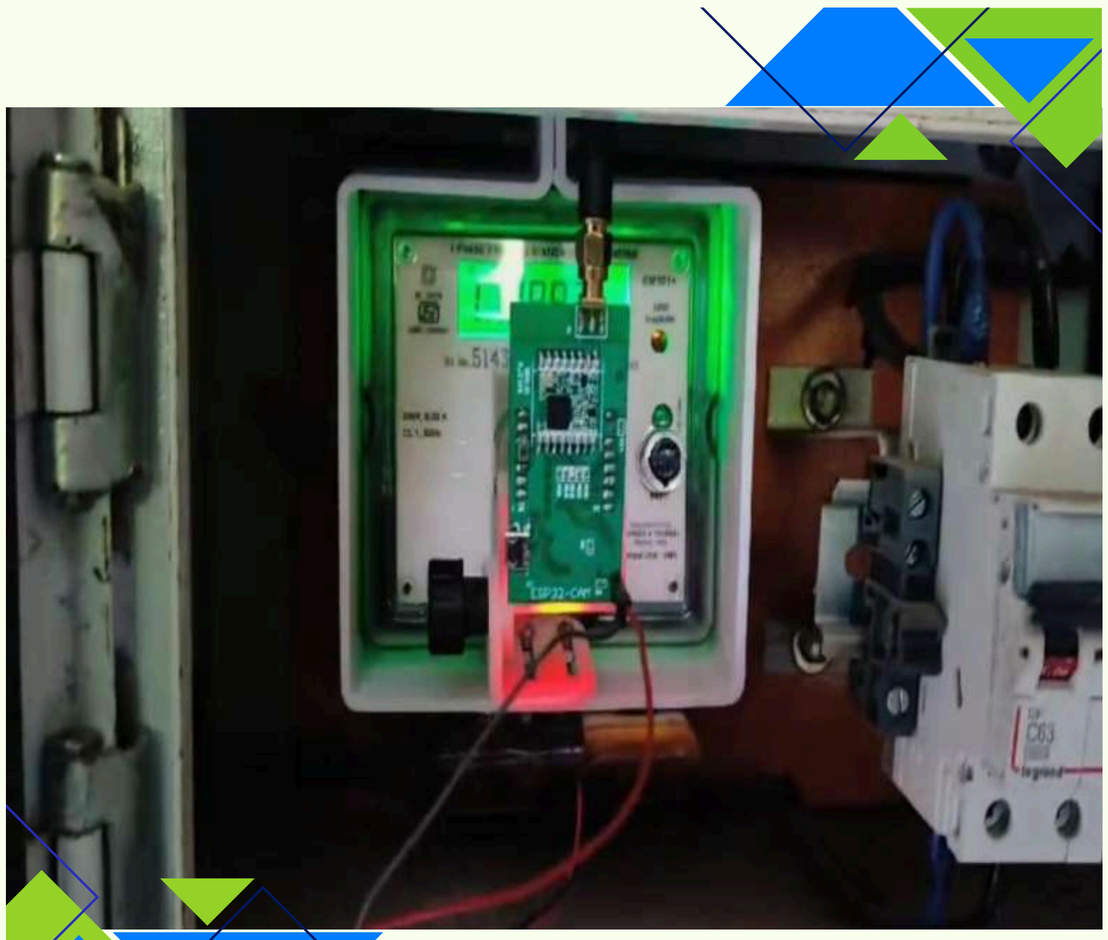
Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Department of Science and Technology (DST)

LoRaWAN-enabled Smart Building

Overview

IIT (BHU) Varanasi has developed and implemented a smart building initiative using LoRaWAN technology to create intelligent, energy-efficient infrastructure. The system converts traditional meters into smart devices for real-time monitoring and optimization. This pilot demonstrates the potential of IoT-driven sustainability, forming the foundation for future smart campus deployments.



Functionalities

- Monitors building energy consumption and environmental conditions
- Enables real-time data collection and analysis through IoT sensors
- Supports automation for energy efficiency and resource optimisation
- Provides insights to guide future smart building projects

Key Features

Innovative – Utilises LoRaWAN technology for smart, energy-efficient buildings

Scalable – Demonstrates feasibility for wider adoption in traditional structures

Supported – Pilot project informs future initiatives and sustainable IoT deployment

Implementation Overview

No	6	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Department of Computer Science and Engineering, Indian Institute of Technology (BHU) Varanasi, Associate Professor of Dept. of Computer Science and Engineering, Varanasi, Uttar Pradesh, 221005

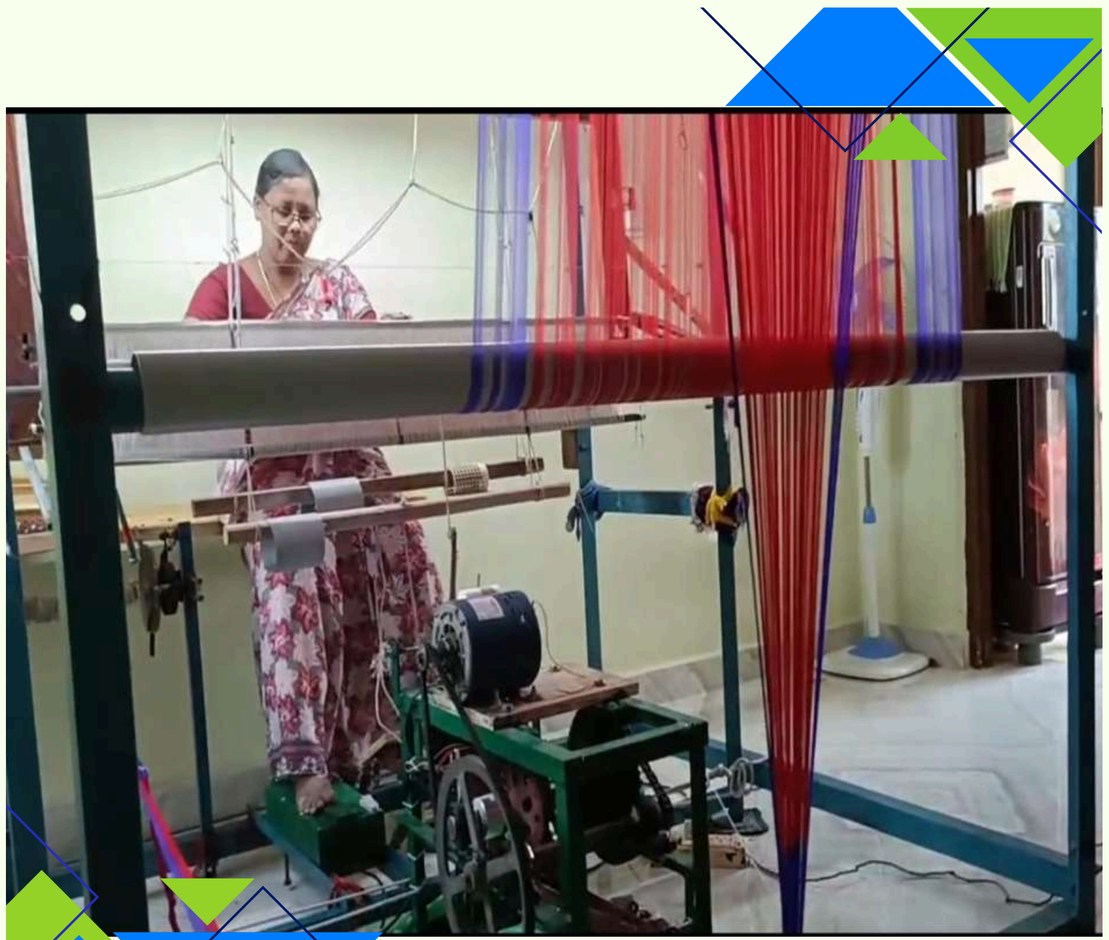
Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Department of Science and Technology (DST)

Modha pedal operating machine for handloom

Overview

The MODHA Pedal Operating Machine enhances handloom weaving by transferring physical strain to a motorised system. It increases weaver comfort, productivity, and allows longer work hours. Compact and versatile, it supports up to 60 sheddings per minute. Training is provided, with minor modifications possible for local needs.



Functionalities

- Reduces physical strain for elderly and disabled weavers
- Increases weaving speed and productivity
- Ensures comfortable and extended work hours
- Supports automatic belt tension adjustment and low-power operation

Key Features

Compact – Easy to install and operate in various handloom setups

Efficient – Supports up to 60 sheddings per minute with low power consumption

Supported – Training provided; modifications possible to suit local weaving requirements

Implementation Overview

500	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

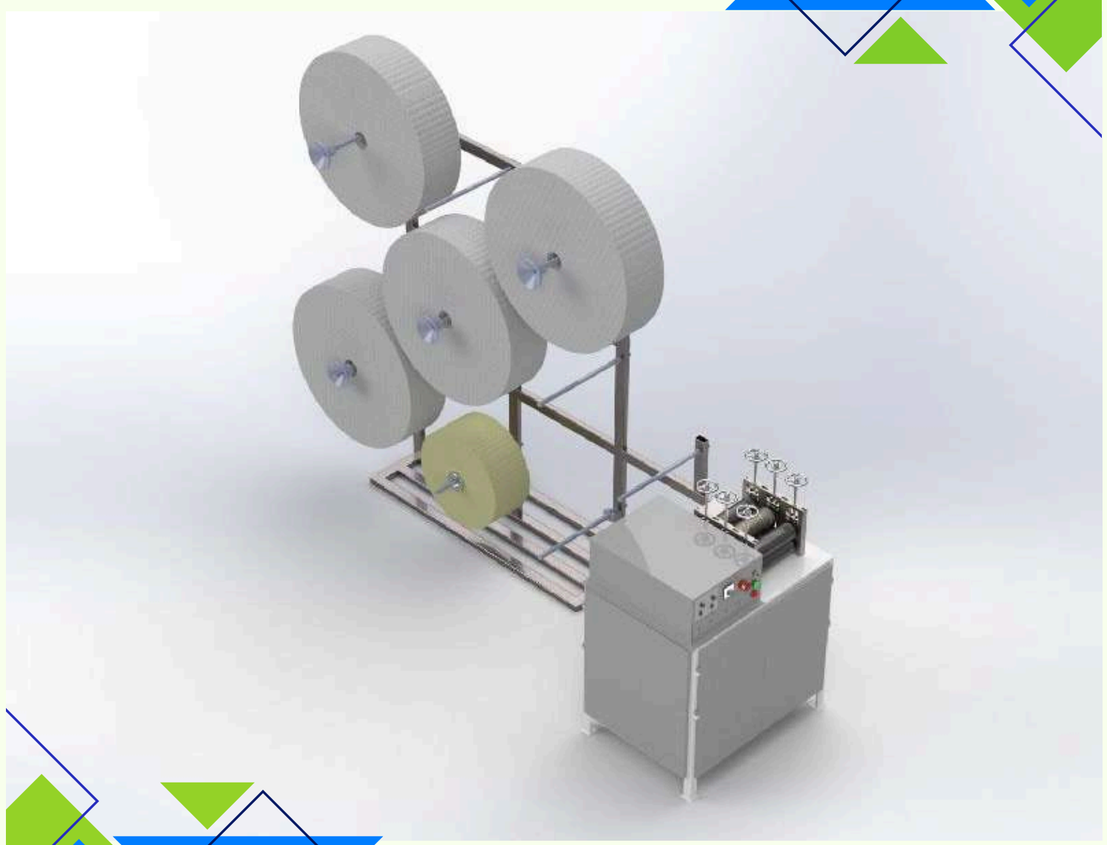
Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Department of Science and Technology (DST)

Sanitary napkin pad making machines

Overview

An innovative automatic sanitary napkin pad machine has been developed that integrates cutting, sealing, embossing, and sterilization using advanced fabric welding technology. It delivers high-speed, efficient production (30–40 pads/minute) with UV sterilization and adjustable controls, available in automatic, semi-automatic, and manual variants for scalable and affordable sanitary pad manufacturing.



Functionalities

- Automates cutting, sealing, embossing, and sterilisation in one process
- Ensures hygiene with an 8-UV light conveyor sterilisation system
- Supports different die sizes (up to 40 inches) for flexible pad design
- Reduces labour by requiring only 2–3 operators per unit

Key Features

Production efficiency - 30–40 pcs/min with 250W motor and 15kHz ultrasonic system

Integrated hygiene – 8 UV light conveyor sterilisation with 0.75HP motor

Scalable options – Available in automatic, semi-automatic, and manual versions

Implementation Overview

70	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Department of Science and Technology (DST)

Bamboo Strip and Incense making machine

Overview

An innovative bamboo processing system has been developed comprising two complementary machines; one for slicing bamboo pieces and another for cutting them into fine sticks or splints. Together, they streamline bamboo stick production, achieving an output of up to 30 kg per day, enhancing efficiency, consistency, and labor productivity.



Functionalities

- Automates bamboo slicing for consistent and precise cuts
- Converts bamboo slices into fine sticks or splints efficiently
- Enhances productivity compared to traditional manual methods
- Reduces drudgery and improves ease of operation

Key Features

Dual-machine system – Specialised machines for slicing and stick-making

High productivity – Output of up to 30 kg of sticks per day

User-friendly design – Easy to operate and maintain with training support

Implementation Overview

100	9	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Department of Science and Technology (DST)

Fully Automatic Cotton Wick Making Machine

Overview

Fully Automatic Cotton Wick Making Machine, developed by the National Innovation Foundation -India, automates the production of round cotton wicks, boosting output from 8–10 manually made wicks per minute to 40–55 per minute. It ensures high-quality wicks, increases income potential up to ₹1,000/day, and requires minimal supervision.



Functionalities

- Automates cotton feeding to streamline wick production
- Produces high-quality, round wicks consistently
- Enhances productivity by 450% compared to manual methods
- Reduces labour and time required for wick-making

Key Features

High efficiency – Produces 40–55 wicks per minute

Quality assurance – Maintains uniform and well-formed wicks

Training support – Users are trained for smooth operation and maintenance

Implementation Overview

15	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Department of Science and Technology (DST)

Semi Automatic Cotton Wick Making Machine

Overview

This semi-automatic cotton wick machine, developed by the National Innovation Foundation - India, improves efficiency by dispensing cotton close to the needles, reducing manual handling time compared to fully manual methods. It streamlines production while maintaining high-quality wicks. Training is provided to ensure proper operation.



Functionalities

- Reduces the time spent plucking cotton from the cotton sliver
- Enhances efficiency compared to manual wick-making
- Maintains consistent wick quality
- Supports income generation through faster production

Key Features

Time-saving – Minimises manual handling of cotton

Organised workflow – Ensures smooth cotton feeding

Training support – Comprehensive guidance provided during training

Implementation Overview

100	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Department of Science and Technology (DST)

Manual - Cotton Wick Making Machine

Overview

The Manual Cotton Wick Making Machine, developed by the National Innovation Foundation - India, automates round cotton wick production, boosting output to 20–25 wicks per minute while maintaining superior quality. Cotton is fed manually, and comprehensive training is provided to ensure proper operation.



Functionalities

- Increases production rate compared to fully manual methods
- Ensures consistent, high-quality round cotton wicks
- Reduces the physical effort required for rolling cotton
- Simplifies the cotton feeding process for easier operation

Key Features

High productivity – Produces 20–25 wicks per minute

Quality consistency – Ensures superior round wicks

Training support – All operational details provided during training

Implementation Overview

250	9	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Innovation Foundation – India (NIF), Grambhati Amrapur, Gandhinagar, Gujarat, 382650

Sector: **Non Farm**
Category : **Manufacturing, Infrastructure & Mobility Systems**

Office of the PSA to the Government of India

Upgradation of Automatic Coir Spinning Machines

Overview

The technology upgrades automatic coir spinning machines with Variable Frequency Drive and advanced control systems, enhancing efficiency, versatility, and production quality. It enables the machine to produce four additional coir types. Kerala State Coir Machinery Manufacturing Company (KSCMMC) will disseminate this technology across Kerala and other parts of India.



Functionalities

- Enhances energy efficiency through Variable Frequency Drive integration
- Improves machine control with automated operational systems
- Expands production capacity to include four additional coir types
- Promotes wider adoption through dissemination by KSCMMC societies

Key Features

Variable Frequency Drive – Efficient and controllable power transmission

Automatic Control System – Optimised for better operational performance

Extended Versatility – Capability to produce multiple coir varieties

Implementation Overview

Yes	9	7
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Rural Technology Action Group, 2nd Floor, ICSR Building, IIT Madras, Chennai, Tamil Nadu, 600036

WATER, SANITATION & ENVIRONMENTAL TECHNOLOGIES

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Council of Scientific & Industrial Research (CSIR)

Anaerobic gas lift reactor (AGR) Technology for Organic Waste Biotransformation

Overview

The Anaerobic Gas Lift Reactor (AGR), developed and patented by CSIR-IICT, Hyderabad, converts diverse organic wastes into biogas and nutrient-rich bio-manure. Using hydrodynamics for continuous mixing without mechanical parts, AGR supports clean energy, LPG replacement, and CBG production. Licensed to 10 companies, 32 plants operate nationwide across 11 states.



Functionalities

- Converts organic waste into biogas efficiently
- Produces nutrient-rich organic bio-manure fertilizer
- Enables LPG replacement and CBG generation
- Supports decentralized and scalable waste management

Key Features

Proven - 32 operational plants in 11 states

Efficient - Continuous mixing without mechanical mixers

Scalable - Suitable for small to large biomass capacities

Implementation Overview

32	9	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Indian Institute of Chemical Technology (IICT), Department of Energy and Environmental Engineering, Hyderabad, Telangana, 500007

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Council of Scientific & Industrial Research (CSIR)

Recycling of Plastic Wastes into Tiles for Structure Designing for Societal Usage

Overview

This patented technology (Indian Patent No. 201611025127) enables the conversion of non-biodegradable plastic waste, such as low-density polyethylene bags and bottles, into durable construction materials like tiles for toilets and public infrastructure. The process enhances mechanical strength, flame retardancy, water resistance, and UV protection, supporting sustainable waste management and circular economy goals.



Functionalities

- Utilises waste plastic bags for producing durable building tiles
- Enhances mechanical and thermal performance
- Reduces landfill and plastic pollution
- Transfers to start-ups and industry for large-scale deployment

Key Features

Eco-friendly – Converts non-biodegradable LDPE waste into useful building materials

Durable – Tested for mechanical strength, flame retardancy, and UV protection

Supported – Hand-holding provided throughout technology implementation

Implementation Overview

7	9	14
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-National Physical Laboratory,
New Delhi, 110012

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Council of Scientific & Industrial Research (CSIR)

Electrostatic Dust Mitigation and Smog Control

Overview

This electrostatic dust mitigation technology efficiently suppresses airborne dust and smog by generating fine, uniformly charged spray droplets that attract oppositely charged particles and settle them rapidly. Based on induction charging principles, the system is multipurpose, air-induced, and air-assisted - ideal for industrial, urban, and construction environments requiring effective air quality management.



Functionalities

- Suppresses airborne dust particles to protect the environment
- Produces uniform fine spray droplets for effective dust control
- Utilises electrostatic fields to charge and neutralise dust and smog particles
- Settles combined particles efficiently onto the ground for cleaner air

Key Features

Efficient – Reduces dust and smog effectively

Multipurpose – Suitable for various industrial applications

Supported – Includes technical guidance and financial support options

Implementation Overview

No	7	15
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Scientific Instruments Organisation(CSIO), Sector 30, Chandigarh, 160030

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Council of Scientific & Industrial Research (CSIR)

Integrated Municipal Solid Waste Disposal System (iMSWDS) for Bulk Waste Generators

Overview

This integrated solid waste management technology mechanises segregation (100–125 kg/h), converts organic waste into biogas (20 cum/day), and produces briquettes (50–60 kg/h). It enables complete on-site waste disposal, promotes circular economy, and provides value-added products. Training and one-year handholding support are included.



Functionalities

- Re-processes the plastic waste into granules
- Biogas generation and utilisation from organic waste
- Conversion of agro-waste into fuel briquettes
- Promotes circular economy and sustainable waste management

Key Features

Comprehensive – Complete on-site waste disposal and value-added product utilisation

Mechanised – Auto-segregation of biodegradable, polymer, inert, and metallic waste

Supported – Training, on-site support, and one-year handholding post-licensing

Implementation Overview

No	6	30
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Mechanical Engineering Research Institute Durgapur, M. G. Avenue, Durgapur-713209, West Bengal, 713209

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Council of Scientific & Industrial Research (CSIR)

Vehicle Mounted Drain Cleaning System

Overview

CSIR-CMERI has developed a Vehicle Mounted Drain Cleaning System with three modules: Recycled Slurry Water Unit, Closed Loop Feedback System, and Post-Cleaning Inspection Unit. Designed for sewer systems up to 300 mm diameter and 100 m length, it serves populations up to 5,000. Training, on-site support, and one-year handholding are provided post-licensing.



Functionalities

- Handles sewer blockages caused by plastics, debris, and tree roots
- Operates effectively for pipelines up to 300 mm diameter and 100 metres length
- Utilises recycled slurry water with a closed-loop feedback system
- Performs post-cleaning inspection to ensure complete blockage removal

Key Features

High-capacity – Suitable for sewer lines up to 300 mm diameter and 100 m length

Efficient – Equipped with recycled slurry water and closed -loop feedback systems

Supported – Includes training, on-site support, and handholding for one year post-licensing

Implementation Overview

No	6	30
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Mechanical Engineering Research Institute Durgapur, M. G. Avenue, Durgapur-713209, West Bengal, 713209

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Council of Scientific & Industrial Research (CSIR)

Compact Vehicle integrated mechanized septic tank cleaning machine

Overview

CSIR-CMERI has developed a vehicle-integrated mechanised septic tank faecal sludge treatment system supporting Swachh Bharat Mission and Sustainable Development Goals 6 & 11. It ensures onsite cleaning, dewatering, and wastewater treatment. Technical support, training, and handholding are provided for smooth adoption.



Functionalities

- Performs onsite septic tank cleaning and faecal sludge management
- Dewaters and treats wastewater with efficient mechanised processes
- Navigates narrow lanes with compact design
- Monitors cleaning completion through post-inspection system

Key Features

Indigenous – Designed with locally developed technologies and components

Powered – Vehicle-driven system ensuring mobility and efficiency

Supported – Training, onsite support, and handholding provided after licensing

Implementation Overview

No	6	30
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Mechanical Engineering Research Institute Durgapur, Mahatma Gandhi Avenue, Durgapur West Bengal, 713209

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Council of Scientific & Industrial Research (CSIR)

Ceramic Membrane based technology for removal of Arsenic (including the process for media preparation) and Iron from ground water

Overview

This technology enables simultaneous removal of arsenic and iron from highly contaminated groundwater, ensuring arsenic levels below WHO limits and safe iron content. Its modular design and user-friendly operation make it ideal for community-level deployment.



Functionalities

- Removes arsenic and iron simultaneously from highly contaminated groundwater
- Achieves arsenic levels below WHO recommended limits and negligible iron content (Fe <0.1 ppm)
- Offers modular design with flexible production capacity ranging from 500 to 20,000 LPD
- Provides a semi-automatic, user-friendly operation suitable for community use

Key Features

Modular Design – Flexible production capacity from 500 to 20,000 LPD

User-friendly– Semi-automatic and user-friendly, suitable even for women operators

Proven Licensing – Technology licensed through CSIR-CGCRI, Kolkata

Implementation Overview

200	9	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR Central Glass and Ceramic Research Institute, Kolkata,
Membrane and Separation Technology Division,
Kolkata,
West Bengal, 743122

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Council of Scientific & Industrial Research (CSIR)

JAIVAM, a Bio-Medium for Accelerating Aerobic Composting of Organic Waste

Overview

Aerobic composting sustainably manages organic waste by stabilising it, reducing odours, and producing high-quality manure. JAIVAM, a tested bacterial consortium with an organic filler medium, accelerates decomposition through efficient aeration and active biodegradation. Unlike many unverified inoculums, it ensures safety and effectiveness. Technical consultancy and monitoring support are provided for optimal deployment.



Functionalities

- Accelerates organic waste decomposition through aerobic composting
- Stabilises waste and controls foul odours during composting
- Produces high-value organic manure for agricultural use
- Utilises a bacterial consortium and organic filler medium to enhance biodegradation

Key Features

Effective consortium – Proven microbes for safe composting

Rapid breakdown – Accelerates composting over conventional

Supported technology – Technical consultancy provided for deployment

Implementation Overview

No	9	10
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Institute for Interdisciplinary Science and Technology, Head, Business Development Division, Thiruvananthapuram, Kerala, 695019

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Council of Scientific & Industrial Research (CSIR)

Terafil Water Filtration media

Overview

TERAFIL is a low-cost, sustainable water filter media developed by CSIR-IMMT that efficiently removes excess iron (95%) and turbidity (99%) from drinking water. Made from locally available materials, it provides safe drinking water at the domestic and community levels. Technical guidance for manufacturing and operation is provided.



Functionalities

- Removes excess iron from drinking water and reduces turbidity to safe levels
- Provides safe water within BIS standards
- Lowers the cost of purification to Rs.0.02 per litre
- Ensures long-term usability with a filter media life of over 3 years

Key Features

Durable – average life of filter media exceeds 3 years

Economical – very low cost per litre of purified water

Supported – technical guidance available for manufacturing and operation

Implementation Overview

2 Lakh	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Institute Of Minerals & Materials Technology, Bhubaneswar, Department Of Pipeline Transport Systems And Societal Technology, Bhubaneswar, Odisha, 751013

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Council of Scientific & Industrial Research (CSIR)

Household Grey Water Treatment and Reuse System

Overview

A patent-protected modular household greywater treatment system has been developed to sustainably manage the 80% share of wastewater generated as greywater. The system treats water containing organics, nutrients, pathogens, and microplastics to produce reuse-quality water for household use reducing freshwater demand, safeguarding groundwater, and replacing conventional soak pits. Technical consultancy for deployment is provided.



Functionalities

- Treats greywater containing organics, nutrients, pathogens, and microplastics
- Reduces freshwater consumption by enabling reuse of treated greywater
- Protects groundwater from contamination and environmental pollution
- Serves as a sustainable alternative to conventional soak pits

Key Features

Modular – Adaptable for individual household installation

Patent-protected – Innovative and scientifically validated technology

Supported – Technical consultancy for deployment provided

Implementation Overview

No	6	10
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Institute for Interdisciplinary Science and Technology, Head, Business Development Division, Thiruvananthapuram, Kerala, 695019

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Council of Scientific & Industrial Research (CSIR)

Biogas generation from organic wastes

Overview

This technology enables sustainable bioenergy generation from biodegradable food waste through anaerobic co-digestion of cooked and uncooked wastes. It optimises the favourable C/N ratio for efficient biogas production while producing nutrient-rich digestate as manure. Training, demonstration, and troubleshooting support are provided.



Functionalities

- Converts biodegradable food waste into renewable biogas
- Optimises C/N ratio via co-digestion of cooked and uncooked wastes
- Recovers digestate as nutrient-rich manure for agriculture
- Reduces landfill burden and environmental pollution

Key Features

Sustainable solution – Generates bioenergy from high-moisture food waste

Dual benefits – Provides renewable energy and organic manure simultaneously

Supported – Training, demonstration, and troubleshooting available

Implementation Overview

Yes	6	3
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

CSIR-Central Leather Research Institute, Senior Principal Scientist, Kanpur, Uttar Pradesh, 208010

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Department of Science and Technology (DST)

Aluminium Air - Advanced Battery Technologies for a Greener Future

Overview

The Portable Aluminium-Air Battery is a sustainable, lightweight energy solution for rural areas, providing reliable lighting and mobile device charging during outages. It is easily refuelled by replacing the aluminium anode, requires minimal maintenance, and comes with post-commercialisation support, including refuelling, recycling, training, and warranty services.



Functionalities

- Provides emergency lighting and mobile device charging
- Enables off-grid energy access and energy independence
- Simplifies maintenance through easy anode replacement
- Supports environmentally responsible recycling of used materials

Key Features

Sustainable – Eco-friendly aluminium delivers reliable off-grid power

Portable – Lightweight, easy to transport, and suitable for remote areas

Supported – Backed by refuelling, recycling, training, warranty, and support

Implementation Overview

Yes	7	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

IIT Palakkad Technology IHub Foundation (Startup: ELEXO Energy Pvt Ltd) , G-10, Govindam Complex, Sansar Chandra Road, Jaipur, Rajasthan, 30200

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Department of Science and Technology (DST)

Sustainable Energy Solutions with Second-Life Battery Technology

Overview

Elexo's second-life battery technology converts used batteries into cost-effective, reliable energy storage for off-grid areas, powering homes, irrigation, and small businesses. It reduces e-waste, supports renewable energy, and comes with comprehensive post-commercialisation support, including installation guidance, maintenance, troubleshooting, spare parts, training, and monitoring services.



Functionalities

- Stores renewable energy for off-grid applications
- Powers homes, irrigation systems, small businesses, and street lighting
- Reduces e-waste through second-life battery reuse
- Enables real-time monitoring and preventive maintenance

Key Features

Cost-effective – Provides affordable energy storage by repurposing used batteries

Customisable – Adaptable for agriculture, cold storage, and microgrids

Supported – Includes installation, maintenance, spares, and training

Implementation Overview

Yes	8	4
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Elexo Energy Private Limited, G-10, Govindam Complex, Sansar Chandra Road, Jaipur, Rajasthan, 30200

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Department of Science and Technology (DST)

Solar Emergency Lighting System

Overview

A robust, energy-efficient solar emergency lamp provides at least 24 hours of illumination on a single charge. Designed for rural areas, it is durable, affordable, and easy to use. Post-commercialisation support includes installation guidance, consumables, and troubleshooting resources.



Functionalities

- Provides reliable 24-hour illumination
- Reduces dependency on non-renewable energy sources
- Ensures affordability and durability for rural communities
- Supports easy maintenance and part replacement

Key Features

Durable design – Rugged and long-lasting for rural conditions

Efficient operation – Solar-charged with LED lighting for low energy consumption

Supportive guidance – User manuals, video tutorials, and troubleshooting included

Implementation Overview

50	7	20
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Contact Details

IIT Palakkad Technology IHub Foundation (Startup: Bumblebee Instruments Pvt Ltd), Unik IMPEX, V Square, Palakkad, Kerala, 678621

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Department of Science and Technology (DST)

Breezemill - Low wind speed turbine

Overview

Breezemill is a wind-powered electricity generator designed for low-wind areas, generating 150 W from airspeeds as low as 3 km/h. With a 20-year lifespan and 4-year ROI, it ensures reliable renewable energy. Post-commercialisation support includes troubleshooting, quality control, and delivery assistance.



Functionalities

- Generates electricity at very low wind speeds
- Maintains power generation at higher winds up to 50 km/h
- Provides a long-term, cost-effective renewable energy solution
- Supports assembly, testing, and maintenance efficiently

Key Features

Low-wind efficiency – Operates at airspeeds as low as 3 km/h

Robust design – Tested PoC machine with 20-year lifespan

Support services – Troubleshooting, quality control, and delivery assistance

Implementation Overview

No	6	10
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

IIT Palakkad Technology IHub Foundation (Startup: Breeze Power Solutions Pvt Ltd), Breeze Power Solutions Private Limited, Pune, Maharashtra, 411004

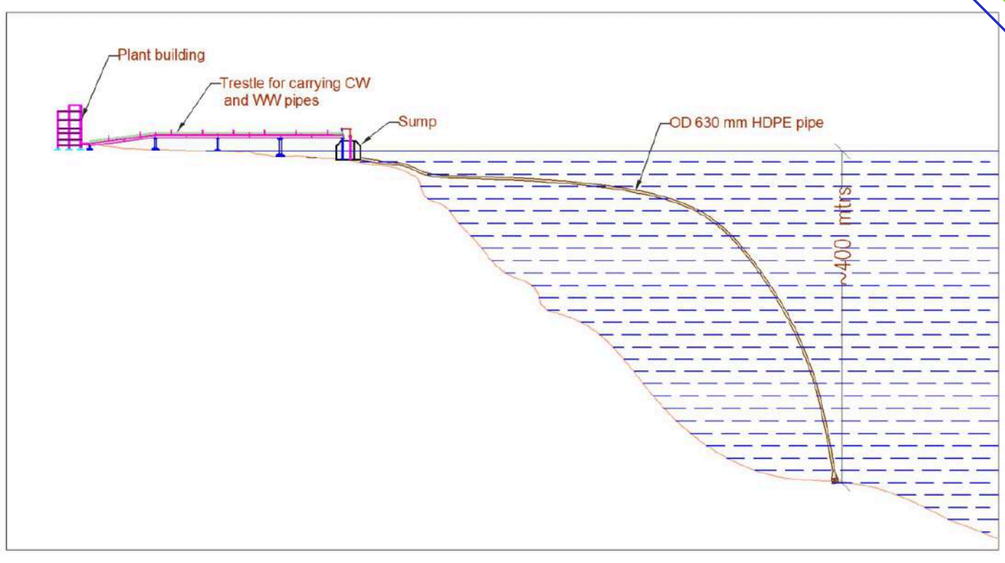
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Category : **Water, Sanitation & Environmental Technologies**

Ministry of Earth Sciences (MoES)

Low-Temperature Thermal Desalination (LTTD) Technology for Island Freshwater Production

Overview

The Low-Temperature Thermal Desalination (LTTD) technology uses natural ocean temperature gradients to evaporate warm surface seawater under low pressure and condense it using deep cold seawater, producing freshwater sustainably. Designed for islands with deep-sea access, LTTD is environmentally friendly, fully indigenous, and already deployed across multiple Lakshadweep Islands with proven long-term reliability.



Functionalities

- Utilises natural temperature gradients to evaporate and condense seawater
- Provides a continuous source of fresh water in island environments
- Minimises environmental impact with low brine concentration (<1%)
- Ensures long-term sustainable operation with low energy requirements

Key Features

High-capacity systems - 1–1.5 lakh L/day with one year of O&M support

Eco-friendly- brine discharge <1% and no chemicals.

Indigenous- robust, and suitable for island conditions, requiring 400 m depth within 1.5 km

Implementation Overview

8	8	30
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Institute of Ocean Technology (NIOT), Chennai, Tamil Nadu, 600100

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Ministry of Earth Sciences (MoES)

ROSHNI: Saline-Water Powered Lantern for Off-Grid Coastal and Island Communities

Overview

ROSHNI is an innovative saline-water lantern developed by NIOT that generates light and charges mobile phones using simple ionization. Designed for coastal and island communities with limited electricity access, it operates for 12 hours per seawater refill. Lightweight, eco-friendly, and disaster-resilient, ROSHNI is licensed for commercialization with full technical support.



Functionalities

- Provides illumination using saline water ionisation
- Charges cell phones and small devices
- Ensures portability and ease of use in remote areas
- Supports emergency use during natural disasters

Key Features

Eco-Friendly – Operates on saline water, no batteries required

Continuous Operation – Works up to 12 hours per water replacement

Target Users – Fishermen, island communities, emergency responders

Implementation Overview

No	8	1
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

National Institute of Ocean Technology (NIOT), Chennai, Tamil Nadu, 600100

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Ministry of Electronics and Information Technology

Cost-Effective Lithium-ion Battery Recycling Technology for Metal Recovery

Overview

MeitY's lithium-ion battery (LIB) recycling technology, developed at C-MET Hyderabad, enables efficient recovery of high-value metals—Lithium, Cobalt, Nickel, and Manganese from assorted discarded LIBs. Using a sequential solvent-extraction process after generating black mass, the technology offers a scalable, economical, and environmentally responsible solution for e-waste management, with six months of technical handholding for commercialization.



Functionalities

- Recovers Li, Co, Mn, and Ni from discarded Li-ion batteries
- Converts discarded batteries into black mass for processing
- Uses selective and sequential solvent-extraction for efficient metal recovery
- Reduces e-waste and promotes sustainable resource utilisation

Key Features

High Recovery Efficiency – Reduces import dependency and boosts circular economy

Versatile – Handles assorted types of Li-ion batteries

Cost-Effective – Reduces operational and material processing costs

Implementation Overview

No	6	5
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

SCAN HERE FOR MORE

Contact Details

Centre for Materials for Electronics Technology (C-MET), Ministry of Electronics and Information Technology, Hyderabad, Telangana, 500051

Sector: **Non Farm**

Category : **Water, Sanitation & Environmental Technologies**

Ministry of Electronics and Information Technology

Eco-Friendly Metal Recovery Technology for Waste Printed Circuit Boards

Overview

This indigenous, environmentally safe process enables efficient recovery of valuable and precious metals from spent printed circuit boards through depopulation, shredding, smelting, electro-refining, and hydrometallurgy. Optimized at pilot scale, it is suitable for recycling mobile, laptop, server, and computer motherboards. Six months of technical hand-holding supports commercial plant establishment.



Functionalities

- Recovers precious and base metals from waste PCBs
- Processes motherboards from mobiles, laptops, servers, and computers
- Uses integrated mechanical, thermal, and hydrometallurgical operations
- Enables urban mining of e-waste for sustainable resource utilization

Key Features

Environmentally Safe – Minimizes hazardous emissions and residues

Indigenously Developed – Process equipment and parameters optimized locally

Versatile – Applicable to various medium- and high-value PCBs

Implementation Overview

No	7	60
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Contact Details

Centre for Materials for Electronics Technology (C-MET), Ministry of Electronics and Information Technology, Hyderabad, Telangana, 500051

Sector: **Non Farm**
Category : **Water, Sanitation & Environmental Technologies**

Office of the PSA to the Government of India

Shaft Water Technology for Equitable Water Distribution

Overview

RuTAG has developed and disseminated Hydraulic Isolation Shaft technology to address inequitable water distribution caused by unequal pressure in drinking water and irrigation systems. This technology improves equity in intermittent water supply systems by stabilizing downstream pressure and eliminating air pockets through a hydraulic isolation shaft. Installed using twin vertical pipes forming an annular chamber, it enhances distribution efficiency, reduces maintenance issues, and increases consumer satisfaction and revenue.



Functionalities

- Ensures equitable water distribution across supply areas
- Stabilises downstream water pressure by removing air pockets
- Replaces traditional water tanks, saving cost and space
- Enhances revenue generation through improved consumer satisfaction

Key Features

Innovative – Shaft design with annular space creating hydraulic head

Reliable – Reduces pressure fluctuations and leakage risks

Durable – Mild Steel (MS) with epoxy coating for longevity

Implementation Overview

Yes	9	2
Deployed	Technology Readiness Level (TRL)	No of training days/hours required

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Contact Details

RuTAG IIT Bombay,
CTARA, Mumbai,
Maharashtra, 400076

AGRICULTURE & LIVELIHOOD SYSTEMS

Page no - 20, 37, 38, 40, 41, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 237, 238, 245, 248, 259, 268, 271, 283, 362

ANIMAL HUSBANDRY & ALLIED SECTORS

Page no - 6, 7, 8, 9, 10, 11, 12, 13, 22, 23, 24, 25, 26, 27, 30, 31

ARTISANS, HANDLOOM & HANDICRAFT TECHNOLOGIES

Page no - 239, 240, 241, 242, 243, 244, 250, 251, 252, 260, 261, 262, 269, 270, 274, 276, 277, 278

CLEAN ENERGY & ENVIRONMENTAL SUSTAINABILITY

Page no - 35, 36, 42, 43, 365, 368, 372, 374, 375, 376, 377, 378, 379

CONSTRUCTION, INFRASTRUCTURE & HABITAT TECHNOLOGIES

Page no - 339, 341, 343, 344, 345, 352, 355, 366

DIGITAL, ICT & SOFTWARE PLATFORMS

Page no - 39, 47, 48, 49, 50, 51, 52, 53, 340

FISHERIES, MARINE & FOREST-BASED LIVELIHOODS

Page no - 5, 14, 15, 16, 17, 18, 19, 21, 263, 264, 265, 266, 267

FOOD PROCESSING, STORAGE & POST-HARVEST SYSTEMS

Page no - 28, 29, 230, 231, 232, 233, 249, 275, 281, 282, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324

MANUFACTURING, INDUSTRIAL & MATERIAL TECHNOLOGIES

Page no - 253, 254, 272, 273, 346, 347, 348, 349, 350, 351, 356, 357, 358, 359, 360, 361, 367

MEDICAL, HEALTHCARE & BIOSENSING TECHNOLOGIES

Page no - 327, 328, 329, 330, 331, 332, 333, 334, 335, 336

RURAL MANUFACTURING & PROCESSING TECHNOLOGIES

Page no - 246, 247

SECURITY, SURVEILLANCE & DRONE-BASED TECHNOLOGIES

Page no - 342, 353

SOCIETAL BENEFIT TECHNOLOGIES

Page no - 369, 370

TRANSPORTATION & MOBILITY TECHNOLOGIES

Page no - 354

WATER SECURITY TECHNOLOGIES

Page no - 44, 371, 373, 380, 381, 382, 383, 384

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Design and Layout of the Resource Book: **Tellable LLP**

Office of the Principal Scientific Adviser to the Government of India

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