Office of the Principal Scientific Adviser
to the Government of India

SCIENCE & TECHNOLOGY CLUSTERS

RICH
Research and Innovation Circle of Hyderabad

BeST CLUSTER

PI - RAHI

BCKIC
Bhubaneswar City Knowledge Innovation Cluster Foundation

AGRI-TECH IN ACTION

WHERE INNOVATION MEETS IMPACT

CONTENTS

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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FOREWORD

India's innovation landscape has entered an exciting phase where scientific research, entrepreneurship, and technology development are converging to transform key sectors of national importance. Agriculture, in particular, is witnessing a renewed surge of innovation driven by deep-tech start-ups, research institutions, and industry collaborations working together to design solutions that are robust, affordable, and scalable. With increasing global interest in India's innovation capabilities, there is immense opportunity for our homegrown solutions to contribute to international agricultural development, while also welcoming global technologies to be contextualised and piloted within India's diverse farming environments.

The Science and Technology (S&T) Clusters initiative of our Office plays a pivotal role in fostering cross-sectoral and cross-border collaboration. Designed as integrated regional ecosystems, the Clusters bring together academia, industry, startups, and government to address local priorities, drive multidisciplinary innovation, and advance socio-economic development aligned with India's national and global competitiveness and the vision of Atmanirbhar Bharat. Within this coordinated framework, the Clusters connect scientific capabilities with entrepreneurial drive, accelerating technology maturation, strengthening data-driven evaluation, and improving pathways for deployment. Moreover, the Clusters function as key platforms for international engagement, facilitating collaboration with global partners on joint research, co-development, and technology transfer, thereby further integrating India into the global innovation landscape.

This Agritech Compendium brings together a curated selection of technologies from across India's Agri-tech Innovation ecosystem that have demonstrated field impact and are ready for wider adoption. These innovations highlight the collective commitment to strengthening agricultural systems, improving rural livelihoods, and expanding India's contribution to global agritech advancement.

The contributions of the participating Clusters and start-ups are acknowledged for their commitment and for presenting solutions that highlight the capability of India's science and innovation ecosystem. This compendium aims to provide policymakers, researchers, industry leaders, and ecosystem enablers with a reference point for understanding India's evolving agritech landscape and its emerging opportunities for international collaboration.

(Ajay K. Sood)

Dated: 20th November, 2025

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

सत्यमेव जयते

भारत सरकार के
प्रमुख वैज्ञानिक सलाहकार के कार्यालय
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Message

Agriculture continues to be the backbone of India's economy, supporting livelihoods, strengthening food security, and shaping the socio-economic fabric of our nation. As India confronts the dual challenges of climate variability and increasing pressure on natural resources, science and technology are emerging as critical drivers that can transform agriculture to become more resilient, efficient, and sustainable.

India's agritech ecosystem has witnessed significant momentum in recent years. From climate-smart practices and bio-based innovations to precision farming, drones, robotics, and geospatial intelligence, India's agritech ecosystem is rapidly evolving. Advanced data analytics and other deep-tech solutions are enabling innovators to address long-standing challenges faced by small and marginal farmers. These advancements are helping enhance productivity, optimise resource utilisation, improve decision-making, and deliver measurable impact on the ground.

Launched in 2020, the S&T Clusters, a flagship initiative of the Office of the Principal Scientific Adviser (OPSA), function as demand-driven, collaborative ecosystems that bring together academia, industry, startups, MSMEs, government bodies, and civil society. By building interconnected innovation networks, the clusters accelerate the development and deployment of technology-driven solutions that tackle regional challenges while advancing national priorities. At present, we have eight S&T Clusters across India working in diverse sectors and delivering transformative outcomes through technological innovation, public-private partnerships, and implementation frameworks.

This *Compendium on Agritech Solutions* reflects these collective efforts. It showcases a curated set of promising technologies that have achieved market readiness, demonstrated field-level success, and shown strong potential to strengthen India's agriculture sector. Each featured solution represents the commitment of India's science and innovation community to empower farmers, enable sustainable growth, and advance a future-ready agricultural landscape.

I commend the participating Clusters for their continued dedication to advancing agricultural innovation and for showcasing impactful, scalable, and future-oriented solutions that underscore India's growing leadership in science- and technology-driven agriculture.

(Parvinder Maini)

Dated : 21st November, 2025

Tel. : +91-11-24011869, E-mail : parvinder.maini@gov.in Website : http://www.psa.gov.in

The S&T Clusters Initiative and Agri-Focused Clusters

The Science and Technology Clusters Initiative under the Office of the Principal Scientific Adviser (O/o PSA) was envisioned to create regional ecosystems that bridge the gap between research, innovation, and deployment. These clusters bring together academia, research institutions, start-ups, government, and industry to solve locally relevant problems with national impact.

Among the eight regional clusters, four are actively engaged in agriculture and allied activities:

- Research and Innovation Circle of Hyderabad (RICH)
- Bengaluru Science and Technology Cluster (BeST)
- Northern Region S&T Cluster (PI-RAHI)
- Bhubaneswar City Knowledge Innovation Cluster (BCKIC)

Together, these clusters are building a shared ecosystem for innovation in agriculture and allied activities, supporting technology validation, facilitating Industry and Investor connects, convergence between government and private efforts, providing funding opportunities and strengthening the agritech value chain from lab to land.

About the Compendium – Agritech Landscape and Impact

India's agriculture is undergoing a transformation powered by science, innovation, and entrepreneurship. This compendium showcases start-ups operating at Technology Readiness Level TRL 8-9, those with validated solutions already making an impact on the ground, especially for smallholder farmers.

The start-ups featured in this compendium span diverse categories such as Pre production (Inputs, machinery), Farming/Production, Plant Protection, Harvesting/QC, Storage & logistics, Food Supply chain, Sustainability and waste management, Allied activities (Livestock, Poultry and Aquaculture activities).

The compendium also reflects how India's agritech ecosystem is evolving, addressing challenges of productivity, input efficiency, Post-harvest losses, market access, and climate resilience. These innovations demonstrate tangible outcomes:

- Increased yields and input efficiency through precision and data-driven agriculture.
- Enhanced income opportunities for smallholder farmers through technology-enabled value chains.
- Improved sustainability through bio-based and climate-smart solutions.
- Strengthened rural entrepreneurship through digital platforms and village-level enterprises.

By curating and presenting these impactful technologies, the compendium aims to serve as a reference document for policymakers, investors, research institutions, and development agencies, accelerating collaboration and convergence across the public and private sectors to build a resilient and technology-driven agricultural future.

Registered name: AgrowSure Products and Innovations Pvt Ltd

Brand name of the start-up: AgrowSure

Founder(s) Name: Akshay Kawale & Akshay Wairale

Category: Farming/Production

Technology Readiness Level (TRL): TRL 9: Commercialization in actual operational environment

START-UP OVERVIEW

AgrowSure Products and Innovations Pvt. Ltd. is an agritech startup that develops affordable, innovative, need-based, and gender-friendly farm machines tailored for small and marginal farmers. Its solutions are designed to reduce labor dependency, improve soil health, and enhance productivity across a wide range of crops. With support from UNDP and UNFAO, AgrowSure has positively impacted over 15,000 farmers by advancing sustainable mechanization and promoting climate-resilient farming practices in drought-prone and degraded land regions.

ABOUT THE TECHNOLOGY

AgrowSure's technology integrates advanced tillage and precision farming techniques to develop lightweight, low-maintenance, and multi-crop adaptable farm machines. Its equipment—such as mechanized weeders, bund formers, and multi-crop seed drills—reduces chemical inputs and fuel consumption while minimizing soil erosion. The startup's gender-inclusive machines enhance productivity and reduce the physical effort required in farming operations, making sustainable mechanization accessible and practical for small and marginal farmers.

IMPACT

1. More than 15000 farmers reached (Direct and indirect beneficiaries)
2. 45% reduction in the use of chemical herbicides due to our weeder machine.
3. 20-25% fuel saving by tractor by using our advanced tilling equipment
4. 20% increase in the field productivity per acre
5. 15% increase in annual income of farmer
6. 50% cost and time saving required to cultivate one acre of land
7. Sold 3000+ machines till now
8. Presence in India: 6+ states

END USERS/CUSTOMERS:

1) Small and marginal farmers
2) Women farmer
3) FPO / SHG's
4) Foundations/NGO
5) Agriculture university/KVK

YEAR OF INCORPORATION

2022

PATENTS FILED

NA

PROBLEM ADDRESSED

Over 85% of India's farmers are small and marginal, cultivating less than 2 hectares of land. They struggle with labor shortages, rising input costs, and lack of affordable machinery, reducing productivity by up to 40%. Most existing machines are costly, heavy, and unsuitable for women or diverse crops, leading to poor adoption of mechanization, soil degradation, and declining farm income.

START-UP WEBSITE

https://agrowsure.com/

PRODUCT IMAGES:

RICH
Research and Innovation Circle of Hyderabad

AI-GENIX INTERNATIONAL PVT. LTD.
Redefining Crop Protection

Registered name: Ai-genix International Pvt Ltd

Brand name of the start-up: Ai-genix International Pvt Ltd

Founder(s) Name: Shahnaz Shaikh & Khalil Shaikh

Category: Plant Protection

Technology Readiness Level (TRL): TRL 9: Commercialization in actual operational environment

START-UP OVERVIEW

AI-GENIX invents, designs, and develops unique, patented technologies for crop protection and sustainable farming, eliminating the need for toxic chemical pesticides. These technologies reduce pesticide costs to zero, increase crop yields by 40%, and protect beneficial insects like honeybees.The AI-enabled machine releases multiple signals, including visual patterns, light frequencies, and acoustic signals, to attract harmful insects, while generating alarm signals to repel beneficial insects.The solution is tested and evaluated by ICAR-KVK, Ankur seeds, ITC Limited, Aries Agro Limited

ABOUT THE TECHNOLOGY

AI-GENIX invents, designs, and develops unique indigenous, patented AI-driven next generation technologies for insects, pest management and disease management for sustainable farming.

These technologies end the farmer's reliance on toxic chemical pesticides to protect their valuable crops without polluting the environment.

IMPACT

1. More than 500 farmers benefitted
2. Yield increased at least 30%
3. Labour cost drop down to zero
4. Crop protection cost reduced by 95%
5. Farmers can achieve above 97% pest control.
6. Deployed 150+ Devices till now
7. Presence in India: PAN India

END USERS/CUSTOMERS:

1. Farmers
2. Corporates in domestic and International market

START-UP WEBSITE

https://www.ai-genix.net/

YEAR OF INCORPORATION

2019

PATENTS FILED

Patent published for Insect communication system and electronic device for insect pest management

PROBLEM ADDRESSED

AI-GENIX invents, designs, and develops unique indigenous, patented AI-driven next generation technologies for insects, pest management and disease management for sustainable farming.
These technologies end the farmer's reliance on toxic chemical pesticides to protect their valuable crops without polluting the environment.

PRODUCT IMAGES:

Registered name: ATGC Biotech Pvt. Ltd

Brand name of the start-up: ATGC Biotech Pvt. Ltd

Founder(s) Name: Dr. Markandeya Gorantla and Dr VB Reddy

Category: Plant Protection

Technology Readiness Level (TRL): TRL 8–9: Pre-commercialization to full-scale deployment

START-UP OVERVIEW

ATGC Biotech Pvt. Ltd., headquartered at Genome Valley, Hyderabad, is a global leader in pheromone-based sustainable crop protection. With over 26 patents and 50 validated products, ATGC integrates synthetic biology, material science, and controlled-release technologies to deliver eco-friendly pest management solutions. Its technologies are deployed across 200,000+ acres, empowering 100,000+ farmers through chemical-free, IPM-compatible agriculture.

ABOUT THE TECHNOLOGY

ATGC's patented CREMIT™ and Nx™ platforms deliver pheromone-based behavioral disruption using glue, solid, and sprayable formats. These systems mimic natural signals to prevent pest mating and colonization without insecticides. The formulations are biodegradable, rainfast, and compatible with drones and manual deployment, offering 60–120 days of protection with ultra-low pheromone doses and up to 85% gross margins.

IMPACT

1. 100,000+ farmers benefitted.
2. 80% pesticide reduction achieved. 10–30% yield increase across validated crops.

200,000+ acres covered under IPM programs.

70–85% resource efficiency vs chemical alternatives.

Export-compliant, residue-free produce enabled

3. Presence in India: PAN India

END USERS/CUSTOMERS:

1. Smallholder farmers/FPOs
2. ICAR & State Agriculture Departments
3. Multinational crop protection companies
4. Forestry agencies (USDA) and international distributors in Israel, Brazil, and Africa.

START-UP WEBSITE

www.atgc.in

YEAR OF INCORPORATION

2011

PATENTS FILED

26 patent families covering pheromone actives, glue dispensers, solid tablets, sprayable microcapsules, cubosome-based adjuvants, and controlled-release delivery systems.

PROBLEM ADDRESSED

Modern agriculture relies heavily on chemical pesticides, leading to resistance, soil degradation, and loss of biodiversity. Smallholder farmers face rising costs and residue compliance barriers. ATGC Biotech addresses this challenge through pheromone and semiochemical-based behavioral pest management, they employ Mating Disruption (Insect Family Planning) reducing pesticide dependence by over 80%, enhancing productivity, and enabling residue-free, climate-smart farming across diverse crops and geographies.

PRODUCT IMAGES:

BCKIC
Bhubaneswar City Knowledge Innovation Cluster Foundation

Bariflolabs

Registered name: Bariflo Cybernatics Pvt. Ltd.

Brand name of the start-up: Bariflo

Founder(s) Name: Mrityunjay Sahu

Category: Allied Activities

Technology Readiness Level (TRL): TRL9. Commercilisation & Revenue generation stage

START-UP OVERVIEW

Bariflo Cybernatics is a technology-driven startup specializing in advanced water management and sustainability solutions. It leverages IoT, AI, and data analytics to monitor, optimize, and enhance water quality and distribution systems. The company focuses on smart, scalable innovations that promote efficient resource utilization and support sustainable urban and industrial ecosystems.

ABOUT THE TECHNOLOGY

This innovation enhances aquaculture efficiency, sustainability, and profitability through AI, IoT, and data-driven technologies. It improves water quality with sediment-level aeration and real-time monitoring, ensuring optimal oxygen levels and preventing waste buildup. Automated feeding with smart check trays optimizes feed conversion, reduces waste, and detects diseases early. AI-powered predictive analytics and remote sensing provide proactive insights, preventing water quality issues. A scalable IoT infrastructure with LoRa connectivity ensures seamless data transmission across large farms. The AI-powered dashboard aggregates real-time data for visualization, alerts, and predictive maintenance. This smart system transforms aquaculture into a more efficient, sustainable, and profitable industry while reducing risks and environmental impact.

IMPACT

1. Rejuvenated over 30 waterbodies across India
2. Units Deployed: 35 till date
3. Presence in India: 4+ States

END USERS/CUSTOMERS:

1. Brackish water farmers
2. Freshwater aqua farmers
3. FPOs
4. Contractors
5. Govt bodie

START-UP WEBSITE

www.bariflolabs.co

YEAR OF INCORPORATION

2018

PATENTS FILED

PCT App No. PCT/IN2021/050611

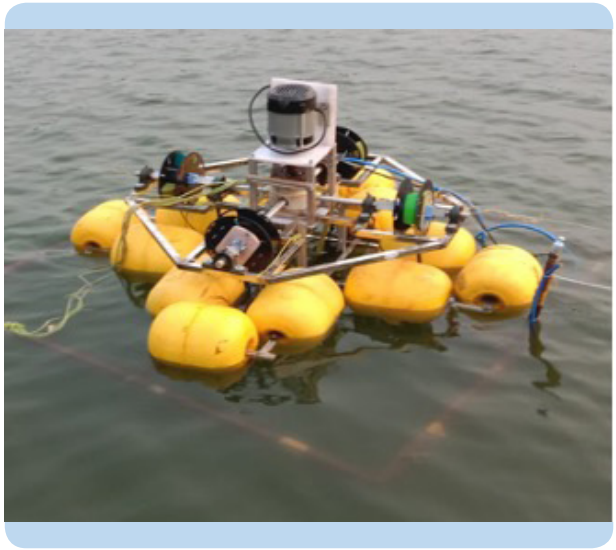
Indian Patent Application No.

202031026797, 202031026796, 201831031000, 34443-(1-6)

PROBLEM ADDRESSED

Traditional aquafarming struggles with water management, microbial imbalances, and inefficient feeding, leading to high costs, waste, and disease outbreaks. Indoor biofloc systems require frequent water exchanges, while outdoor farms face power failures, inconsistent feeding, and poor aeration. To solve these challenges, Bariflo Cybernetics has developed an Integrated Aquaculture Management System (IAMS) using AI, IoT, and automation.

PRODUCT IMAGES:



RICH
Research and Innovation Circle of Hyderabad

BioPrime AGRISOLUTIONS PVT LTD

Registered name: BioPrime Solutions Pvt Ltd

Brand name of the start-up: Bioprime

Founder(s) Name: Dr Renuka Karandikar
Dr Amit Shinde
Dr Shekhar Bhosle

Category: Pre-production (fertilizers, biostimulants)
Plant Protection
Sustainability and waste management

Technology Readiness Level (TRL): TRL 9 – Commercialization in actual operational environment

START-UP OVERVIEW

Bioprime is an agri-biotechnology company developing next-generation biologicals powered by proprietary discovery platforms—SNIPR™ (secondary metabolite discovery) and Bionexus™ (India's largest plant-associated microbial library). The company delivers next gen biostimulants, biofertilizers, seed coatings, NUE enhancers and biological crop protection products that are scientifically validated, field-tested, and scalable. Bioprime works closely with farmers, enterprises, and global partners to enable sustainable, high-performance agriculture.

ABOUT THE TECHNOLOGY

Bioprime's technology integrates advanced metabolomics, microbial discovery, and precision formulation. SNIPR™ identifies high-value biomolecules that enhance stress tolerance, nutrient use efficiency, and plant immunity. Bionexus™ screens and develops robust microbial strains across diverse crops and geographies. These platforms significantly shorten R&D cycles and enable consistent, reproducible products with strong field efficacy. The result: fast-acting biologicals that deliver measurable agronomic outcomes at scale.

IMPACT

1. Benefited 170,000+ farmers across major agricultural states
2. Achieved 20–35% average yield improvement across key crops
Improved nutrient-use efficiency by 25–30%, lowering fertilizer dependency
Enabled 18% increase in soil organic carbon through biological soil health products
Reduced climate-induced crop losses by up to 70% using stress-resilience biologicals
3. Deployed products across 14+ states through 1,200+ channel partners

END USERS/CUSTOMERS:

1. Farmers across India
2. Agri-input distributors & retailers
3. Large agribusiness companies
4. Seed companies
5. Fertilizer and crop protection companies

PATENTS FILED

3 granted
5 filed
12 TMs

PROBLEM ADDRESSED

Indian agriculture faces declining soil health, low nutrient-use efficiency, increasing abiotic stress due to climate change, and rising pest/disease pressure. Farmers depend heavily on chemical inputs, leading to soil degradation, lower productivity, and escalating costs. Bioprime addresses these challenges by offering biological solutions that improve crop resilience, optimize nutrient uptake, restore soil health, and enhance yields sustainably—reducing input dependency while increasing overall farm profitability.

START-UP WEBSITE

https://www.bioprimeagri.com

YEAR OF INCORPORATION

2016

PRODUCT IMAGES:

RICH
Research and Innovation Circle of Hyderabad

Farm Sathi®

Registered name: Dhi Sathi Robotics Pvt Ltd

Brand name of the start-up: Farmsaathi

Founder(s) Name: Susanth Masana

Category: Farming/ Production

Technology Readiness Level (TRL): TRL 9: Commercialization in actual operational environment

START-UP OVERVIEW

Farm Sathi is revolutionizing small and medium-scale horticulture farming through its smart, electric robo-tractor designed to reduce dependency on manual labor and enhance productivity. By enabling farm entrepreneurs to operate franchise-based service models, the start-up empowers rural livelihoods while promoting sustainable, tech-driven agriculture that boosts farmer profitability by up to 30%.

ABOUT THE TECHNOLOGY

Farm Sathi's patented 12HP compact electric tractor integrates robotic and autonomous navigation features for precision operations in tight spaces. Running entirely on clean energy, it combines advanced control systems with the agility of traditional tractors, minimizing fuel costs, reducing emissions, and ensuring efficient, low-maintenance farm mechanization for diverse horticultural applications.

IMPACT

1. Benefitted 50+ Farmers
2. 50% reduction in labor expenses
3. Innovative Subscription Franchise Model
4. Presence in India: 3+ States

END USERS/CUSTOMERS:

1. Farmers of Horticulture Crops (All majority fruits and vegetables), with a min 3.5ft. spacing.

START-UP WEBSITE

https://farmsathi.com

YEAR OF INCORPORATION

2020

PATENTS FILED

Patent No.: 537732

Application No.: 202241028413

Title: Agricultural Robot

PROBLEM ADDRESSED

Indian agriculture faces rising challenges due to acute labour shortages, increasing wage costs, and declining farm productivity. Traditional farm operations rely heavily on manual labour and fuel-based machinery, leading to inefficiencies, overuse of inputs, and soil health deterioration. Additionally, blanket application of harmful agrochemicals continues to impact both farmer health and the environment, underscoring the need for clean, automated, and sustainable mechanization solutions.

PRODUCT IMAGES:

Registered name: Digite Infotech Private Ltd

Brand name of the start-up: AgWise

Founder(s) Name: A V Sridhar

Category: Farming/ Production

Technology Readiness Level (TRL): TRL 9: Commercialization in actual operational environment

START-UP OVERVIEW

Digite Infotech Pvt. Ltd., founded in 1997, is a leading provider of AI/ML enterprise solutions. Its agriculture technology division, AgWise, delivers innovative solutions to empower farmers, institutions, and development organizations. Combining over a decade of experience in IoT, enterprise software, and agronomy, AgWise offers Conversational Agriculture Solutions and Smart Farming technologies. By fusing real-time sensing, automation, and intelligent communication, AgWise enhances productivity, reduces input costs, and promotes sustainable practices, enabling resilient and technology-driven agricultural ecosystems.

ABOUT THE TECHNOLOGY

AgWise integrates precision farming IoT with conversational AI to revolutionize agricultural operations. Its Smart Farming Solutions optimize irrigation, fertigation, and crop management using advanced sensors and automated farm controllers, while its Conversational Agriculture Solutions provide multilingual, WhatsApp-based advisory support for farmers and FPOs. Together, these technologies enable real-time decision-making, efficient resource use, and scalable engagement, helping farmers increase yields, lower costs, and practice environmentally sustainable agriculture.

IMPACT

1. 41880 famers benefitted through Conversational Advisory Services:
2.100+ Acres Automated with Smart Farming Solutions
3. 25%- 50% Reduction in NPK Fertilizer Usage
25-50% Reduction in Irrigation Water Use
10-15 Reduction in Cost of Production
4. 200+ Smart Farming Solution devices deployed
5. Presence in India: PAN India

END USERS/CUSTOMERS:

1. Farmers
2. Farmer Producer Organizations (FPOs)
3. Agribusinesses, Agricultural Universities and Research Institutes

START-UP WEBSITE

https://www.agwise.com/

YEAR OF INCORPORATION

2018

PATENTS FILED

No Patent.

Published Research Papers on IoT and sensor-based irrigation in Banana and Tomato crops, published in Scientia Horticulturae and the Indian Journal of Horticulture: https://www.sciencedirect.com/science/article/pii/S0304423825000330 & https://journal.iahs.org.in/index.php/ijh/article/view/2722

PROBLEM ADDRESSED

Indian agriculture faces challenges of declining productivity, resource inefficiency, and limited technology adoption at the farm level. Farmers often rely on guesswork due to lack of timely data, leading to overuse of water and fertilizers, reduced profitability, and unsustainable practices. There is an urgent need for intelligent, accessible, and data-driven systems that guide farmers with real-time advisories and automate critical farm operations.

PRODUCT IMAGES:

RICH
Research and Innovation Circle of Hyderabad

ekosight

Registered name: Ekosight Technologies Private Limited

Brand name of the start-up: Soil Doctor

Founder(s) Name: Dhiraj Choudhary

Category: Farming / Production

Technology Readiness Level (TRL): TRL 9: Commercialization in actual operational environment

START-UP OVERVIEW

Ekosight is an agri-tech company focused on restoring soil health and improving farm productivity for smallholder farmers. Through its Soil Doctor Clinics powered by Soil Intelligence, the company integrates portable IoT devices, AI, and satellite data to deliver instant, plot-specific soil and crop advisory services. Its model not only reduces input costs and enhances yields but also fosters sustainable rural livelihoods by training local youth to serve as Soil Doctors.

ABOUT THE TECHNOLOGY

Ekosight's technology combines a portable, IoT-enabled soil testing device with an AI-powered Soil Intelligence Engine to deliver instant and accurate analysis of more than 15 soil parameters directly on the farm. Using optical spectrometry, satellite indices, and weather data, the system generates precise, crop-specific recommendations. These insights are delivered through a mobile dashboard and the company's Soil Doctor network, enabling optimized fertilizer use, improved water management, and data-driven, regenerative farming practices.

IMPACT

1. 4,500+ farmers benefitted through accurate soil testing and data-driven advisory.
2. 20–28% increase in crop yield, leading to Rs 10,000–15,000 rise in farmer income annually.
3. Rs 3,000–4,000 reduction in input costs due to optimized fertilizer and resource usage.
4. 70+ Soil Doctor kits deployed across multiple regions, enabling scalable, on-ground implementation.
5. Operations expanded across 8 states
6. Driving resource efficiency and sustainability by empowering farmers with actionable soil intelligence and best-practice-based advisory.

END USERS/CUSTOMERS:

1. Agri-entrepreneurs
2. FPOs/NGOs
3. Agri-input firms
4. CSR/government bodies with on-field presence

START-UP WEBSITE

https://ekosight.com

YEAR OF INCORPORATION

2021

PATENTS FILED

1: Application No: 202341012329 Title: "Rapid method for determining available phosphorus in soil and kit thereof"
2: Application No: 202341047657: Title: "A Compact Portable Shaker Device For An Efficient Mixing And Shaking Of Sample"
Design Rights for Shaker Design: Application No: 446253-001
Soil Doctor by Ekosight TM: 9214117; Ekosight TM: 5593376

PROBLEM ADDRESSED

India's smallholder farmers face widespread soil degradation and soil illiteracy. Over 60% of soils are low in organic carbon and deficient in nutrients, leading to fertilizer overuse, high input costs, and declining yields. Existing soil testing is lab-dependent, slow, or generic—leaving farmers without actionable, localized guidance. The absence of a trusted advisory system at the village level compounds the challenge, preventing farmers from adopting regenerative practices and making them vulnerable to climate shocks.

PRODUCT IMAGES:

BCKIC
Bhubaneswar City Knowledge Innovation Cluster Foundation

GOCARIN

Registered name: Gocarin Industries Pvt. Ltd.

Brand name of the start-up: Poshan

Founder(s) Name: Ramanuj Panda

Category: Animal Feed

Technology Readiness Level (TRL): TRL 9: Commercialization in actual operational environment

START-UP OVERVIEW

Gocarin Industries is an agri-tech startup focused on sustainable animal nutrition. It develops innovative, cost-effective, and eco-friendly animal feed solutions using locally available resources and scientific formulations. The company aims to enhance livestock productivity, reduce feed costs for farmers, and promote circular economy practices in the animal husbandry sector.

ABOUT THE TECHNOLOGY

GoCarcin's technology ecosystem combines sustainable livestock feed, digital advisory, and data-driven management tools to enhance dairy productivity. Its flagship feed brand, Poshan, is formulated with natural ingredients to improve cattle health, boost immunity, and reduce methane emissions. Complementing this, GoCarcin's mobile application provides real-time insights, comprehensive health tracking, customized feed recommendations, and environmental alerts, enabling farmers to make informed decisions and adopt climate-smart livestock management practices.

IMPACT

1. 14,000+ dairy farmers reached across 1,200+ villages. Worked with 10+ FPOs/ Cooperatives and SHGs.
2. Patented red-algae feed reduces up to 30-35% methane emissions.
3. 10–18% increase in milk yield and stronger cattle immunity.
4. Rs 5 crore+ cumulative revenue and 70+ jobs (Direct & Indirect) created.
5. Women inclusion: 6000+ women engaged through micro-distribution.

END USERS/CUSTOMERS:

Marginal Cattle breeders

START-UP WEBSITE

www.gocarin.com

YEAR OF INCORPORATION

2022

PATENTS FILED

Patent in process

PROBLEM ADDRESSED

Smallholder livestock farmers often face inconsistent feed quality, rising input costs, and limited access to scientific animal nutrition and health advisory. These challenges lead to low milk yields, poor animal health, and unsustainable farming practices. The lack of data-driven insights, real-time monitoring, and tailored nutrition solutions further widens productivity gaps. GoCarcin addresses this by integrating sustainable feed, digital tools, and precision livestock management support.

PRODUCT IMAGES:

Registered name: Kheyti Tech Pvt. Ltd

Brand name of the start-up: Kheyti

Founder(s) Name:
- Kaushik Kappagantulu - Co-founder & CEO
- Saumya - Co-Founder & Chief Program Officer
- Ayush Sharma - Co-Founder & Head of Product R&D

Category: Farming/Production
Plant Protection

Technology Readiness Level (TRL): "TRL 9: Commercialization in actual operational environment

START-UP OVERVIEW

Kheyti Tech Pvt Ltd pioneers affordable, climate-smart farming solutions that empowers smallholder farmers to adapt to changing climate. By integrating protected cultivation with irrigation, hands-on support, and end-to-end agronomy services, Kheyti ensures technology is not just delivered but also well adopted. With one of the cheapest, yet highly durable protected cultivation structures in India, Kheyti is making high-value horticulture accessible and ensuring income stability for smallholder farmers.

ABOUT THE TECHNOLOGY

Kheyti's flagship model "Kheyti Rakshak," is 240m² low cost, modular shade-nethouse with drip irrigation that optimizes water, nutrient use, and crop protection. With real-time monitoring and agronomy services services, it enables year-round production, boosting yields up to 7x while using 1/50th the water and significantly less fertilizer and pesticides. At 90% lower cost than polyhouses, it has proven to increase farmer incomes by 73%, empowering smallholder farmers to become climate-resilient.

IMPACT

1. 7000+ farmers benefitted
2. Average farmer income increase by 73%
3. 2-4x higher yield
4. 1/50th water used per kg grown
5. 90% reduction in pest attacks
6. 6200+ units installed with 13,500+ crop seasons
7. 100+ districts in 8 states

END USERS/CUSTOMERS:

Smallholder and marginal farmers

START-UP WEBSITE

https://www.kheyti.com/

YEAR OF INCORPORATION

2015

PATENTS FILED

NA

PROBLEM ADDRESSED

Small and marginal farmers (≤5 acres) dominate India's agriculture, contributing over 45% of total output, yet face disproportionate climate risks, including erratic rainfall, heat waves, pest outbreaks, and soil degradation. Coupled with limited access to irrigation, credit, and high-value markets, these challenges have resulted in severe yield and income losses, with 80% of marginal farmers reporting crop failures in the past five years (FEED–DIU, 2024). Open-field cultivation is becoming increasingly unviable, highlighting the urgent need for accessible and affordable climate-resilient farming solutions.

PRODUCT IMAGES:

RICH
Research and Innovation Circle of Hyderabad

KUPPISMART
Smarter Today, Sustainable Tomorrow

Registered name: Kuppismart Solutions Pvt Ltd

Brand name of the start-up: Livestockify

Founder(s) Name: Akhil Reddy

Category: Allied activities

Technology Readiness Level (TRL): TRL 8 – Pre-Commercialization – Technology is ready for full-scale application

START-UP OVERVIEW

Kuppismart Solutions Pvt Ltd pioneers advanced IoT and data analytics solutions across agriculture, spanning poultry, dairy, mushroom farming, sericulture, controlled environment agriculture, and piggery farming. By integrating smart devices that track temperature, humidity, soil moisture, nutrient levels, and air quality, Kuppismart delivers actionable insights in real time. The company's solutions empower farmers with precision monitoring, enabling sustainable practices, reducing risks, and optimizing farm management for greater productivity and profitability.

ABOUT THE TECHNOLOGY

The technology integrates advanced health monitoring devices that analyze bird vocalizations, water quality parameters (pH, temperature, and TDS), and vision systems for 24/7 surveillance of hen behavior, automated counting, and weight estimation. These real-time insights enable early detection of diseases, proactive decision-making, and efficient resource utilization. By combining IoT and AI, Livestockify empowers poultry farmers to adopt data-driven, sustainable practices, improving flock health, reducing losses, and driving higher productivity for a resilient future.

IMPACT

1. 150+ farmers benefitted
2. 24/7 monitoring and management of poultry farms, 25–30% reduction in mortality, 40–50% reduction in labor needs, 15–20% increase in yield through better decision-making
3. Deployed 15 paid pilots till now
4. Presence in India: 8+ states

END USERS/CUSTOMERS:

1. Poultry Farmers
2. Poultry Organisations2. Poultry Organisations"

PATENTS FILED

Patent in process

START-UP WEBSITE

https://www.kuppismart.com/

YEAR OF INCORPORATION

2023

PROBLEM ADDRESSED

Poultry farming in India suffers major setbacks due to disease outbreaks, causing losses of up to 30% annually. Reliance on traditional visual checks delays intervention, increasing mortality rates and inefficiencies. Farmers lack access to real-time flock health and environmental data, making timely decisions difficult. Manual health checks consume nearly 40% of a poultry worker's time, highlighting the urgent need for automated, data-driven solutions to improve productivity and reduce losses.

PRODUCT IMAGES:

RICH
Research and Innovation Circle of Hyderabad

MARUT
- DRONES -

Registered name: Marut Dronetech Private Limited

Brand name of the start-up: Marut Drones

Founder(s) Name: Prem Kumar Vislawath

Category: Plant protection

Technology Readiness Level (TRL): TRL 9:Commercialization in actual operational environment

START-UP OVERVIEW

Marut Drones is India's leading drone technology company building problem-first, high-impact solutions across agriculture, reforestation, public health, logistics, and infrastructure. With strong R&D roots, 8 patents, and end-to-end engineering capabilities, Marut has trained 1200+ pilots, created India's largest DAAS footprint, and enabled agri drone adoption across 10+ lakh acres. The company's mission is to build drones that improve productivity, safety, and income for millions.

ABOUT THE TECHNOLOGY

Marut Drones designs and manufactures high-performance drones built entirely in-house—from avionics to payloads and autonomy systems. Their platforms support multi-crop spraying, direct seeding, afforestation, vector control, high-payload logistics, and high-rise cleaning. The company follows a rapid prototype-to-field-validation approach, ensuring reliable performance in real Indian conditions. Patent-backed innovations and modular systems allow fast customization, scalability, and deployment across diverse sectors.

IMPACT

1. 40,000+ farmers directly benefitted through drone spraying, seeding, and training initiatives across India.
2. 20–30% reduction in input cost achieved through precision spraying and uniform application of agri inputs.
3. 15–25% improvement in yield and overall farm productivity, driven by timely operations and accuracy.
4. 800+ drone units deployed across agriculture, forestry, health, and disaster response use-cases.
5. 10 lakh+ acres serviced through Drone-as-a-Service (DAAS) operations and partner networks.
6. Presence across 16+ states, covering diverse terrains—agriculture belts, forest zones, coastal regions, and high-altitude areas.

END USERS/CUSTOMERS:

1. Farmers & Farmer Groups
2. Custom Hiring Centres (CHCs)
3. Agri Entrepreneurs & Drone Service Providers
4. Government & Public Sector Bodies
5. Municipal Corporations (Mosquito control, sanitation)
6. Agri-Input & Food Industry
7. Education & Training Ecosystem
Drone Training Academies (RPTOs)
Universities & Agriculture Colleges
Skill Development Centers (NSDC / ASCI aligned)
8. Infrastructure & Utility Providers
9. Logistics & Delivery Ecosystem

PATENTS FILED

8 patents & 50+ filings across
airframes, payloads & autonomy

PROBLEM ADDRESSED

India faces critical challenges across agriculture, forestry, public health, and logistics due to labour shortages, high operational risks, and slow, manual processes. Farmers struggle with rising input costs, delayed crop operations, and limited access to advanced tools. Large-scale tasks like afforestation, vector control, high-rise cleaning, and rural delivery remain inefficient and unsafe. Marut Drones addresses these gaps by replacing labour-heavy, hazardous work with reliable drone-based automation.

START-UP WEBSITE

https://marutdrones.com/

YEAR OF INCORPORATION

2019

PRODUCT IMAGES:

RICH
Research and Innovation Circle of Hyderabad

HELIOT.AI
Smart Farming Solutions

Registered name: Navariti Innovation Pvt. Ltd.

Brand name of the start-up: HELIOT.AI - Smart Farming Solutions

Founder(s) Name: Sisir Chandra Jonna

Category: Farming/Production, Plant Protection, Sustainability & Allied Activities

Technology Readiness Level (TRL): TRL 8 – Pre-Commercialization – Technology is ready for full-scale application

START-UP OVERVIEW

Navariti Innovation Pvt. Ltd. is a deep-tech startup developing AIoT-driven smart farming and climate-tech solutions under its HELIOT.AI platform. The company provides integrated hardware, software, and data analytics for monitoring water, soil, and environmental conditions. Its modular, field-ready systems support climate-resilient agriculture, precision nutrient management, and smart irrigation. Navariti's solutions are deployed across government programs, CSR initiatives, FPO clusters, and enterprise-led digital agriculture projects.

ABOUT THE TECHNOLOGY

HELIOT.AI combines advanced sensors, automation hardware, and cloud analytics to deliver real-time insights for weather(environment), soil, and irrigation management. Key innovations include ENVIROSENSE (solar AWS), Soil Scope (portable soil health device), Smart AWD and Smart Irrigation Controllers for automated pump/valve operation. The ecosystem integrates AI-based advisories, ET-driven irrigation scheduling, and remote monitoring. The platform supports large-scale deployments through connectivity, modular architecture, and multi-device integration.

IMPACT

1. 22,500+ farmers supported through weather, soil, and irrigation intelligence
2. 20–40% reduction in water usage with automated irrigation
3. 15–20% increase in yield through data-driven decisions
4. 300+ devices deployed across villages, institutes, and CSR sites
5. Deployments in 8+ states, enabling climate-smart agriculture
6. Contributing to Greenhouse gases reduction by 30-40% by AWD for paddy with IRRI colloboration.

END USERS/CUSTOMERS:

1. Farmers & FPOs
2. Agri Departments & Government Missions
3. CSR Programs & NGOs
4. Research Institutes & KVKs
5. Agri-Entrepreneurs & Protected Cultivation Units

START-UP WEBSITE

https://www.heliot.ai/

YEAR OF INCORPORATION

2020

PATENTS FILED

1 Patent Filed – Completed Provisional Stage
Patent Process Initiated for Additional Innovations
5 Trademarks Granted (brand protection for HELIOT.AI and other solutions)

PROBLEM ADDRESSED

Smallholder farmers face 30–40% irrigation inefficiencies, 20–22% soil nutrient imbalance, and 15–25% crop losses due to unpredictable microclimatic variations. Limited access to real-time environmental data leads to 25–35% overuse of water, 10–15% excess fertilizer application, and 40–60% delays in critical farm decisions. Manual monitoring of water, soil, and weather parameters consumes 2–3 hours of labor per day and still results in inaccurate field assessment.

These inefficiencies, combined with rising climate variability, make farmers highly vulnerable to weather shocks, cause higher input costs, and reduce their overall productivity by 20–30%. There is a critical need for affordable, field-ready AIoT systems that provide real-time actionable insights, automate irrigation and nutrient delivery, and support data-driven decision-making for resilient and profitable farming.

PRODUCT IMAGES:

Registered name: Renkube Private Limited

Brand name of the start-up: Renkube

Founder(s) Name: Balaji Lakshmikanth Bangolae

Category: Farming/Production

Technology Readiness Level (TRL): TRL 8 – Pre-Commercialization – Technology is ready for full-scale application

START-UP OVERVIEW

Renkube reduces the cost of solar PV by 25% and enabling dual usage of land for both food and energy needs. We have developed a new type of semi-transparent panel layout consisting of Vertical Solar panels and glass reflectors that overall boost the energy yield of the panels by 60% and at the same put the light unused by the solar panel to the ground underneath making it a perfect candidate for AgriPV

ABOUT THE TECHNOLOGY

Motion Free Optical Tracking (MFOT) technology uses tempered glass with grooves which redirects light to provide increased energy yield. The IP is in the groove design which is cheaper and has zero maintenance

IMPACT

1. The technology at scale can save up to 500 million tons of C0 2 per year for an installation of about 556 GW of Solar PV. This is the additional savings coming from the technology at 60% higher energy yield.
2. Agri PV solution would help double income of 42 Lakh farmers for 500 GW solar PV installation over 10,000 Sq KM using the technology.

END USERS/CUSTOMERS:

1. High Income group farmers
2. Solar developers in need of land for solar.

START-UP WEBSITE

https://www.renkube.com/

YEAR OF INCORPORATION

2017

PATENTS FILED

Patent Filed in US, India, Europe, China and Australia (in Various stages of examination)

PROBLEM ADDRESSED

Renkube's dual-use AgriPV technology using Motion-Free Optical Tracking increases solar panel energy yield by 60%, enabling 100% land use for solar and agriculture. This reduces energy costs by 25% and boosts farmer income, making AgriPV economically viable. With India's net-zero goal requiring massive solar capacity, Renkube's innovation offers a solution to avoid agricultural land loss and decrease transmission losses by expanding solar beyond arid regions.

PRODUCT IMAGES:

Registered name: RootsGoods Private Limited

Brand name of the start-up: RootsGoods

Founder(s) Name: Sachin Hegdekudgi

Category: Post Harvest Management / QC

Technology Readiness Level (TRL): TRL 8: Pre-Commercialization – Technology is ready for full-scale application

START-UP OVERVIEW

RootsGoods provides AI-based objective quality assessment at the farm level for maize through its platform to streamline sales, storage pipelines, and price prediction. The company currently focuses exclusively on maize. Most quality assessments are conducted subjectively at the farm level, increasing the risk of crop undervaluation for farmers and potential losses for buyers due to inadequate quality information. The platform, accessible via a mobile application, enables assessment of maize quality parameters, including size, colour, fungus infection, inert (foreign) material, and moisture content—and connects farmers with buyers and logistics providers to efficiently manage the sales cycle.

ABOUT THE TECHNOLOGY

RootsGoods solution utilizes advanced Artificial Intelligence (AI) and Computer Vision technologies to deliver accurate and objective maize quality assessment directly at the farm level. By capturing images of the produce through a smartphone, the system analyzes grain characteristics and estimates moisture content, reducing reliance on manual, subjective evaluation. The technology also allows seamless tracking of maize from farm to buyer. Integrated with cloud storage, it ensures real-time data syncing and remote access for buyers and warehouse operators. The platform is accessible via a user-friendly mobile application available in multiple languages, making it easy for farmers and stakeholders to interact with the system. Overall, this technology improves transparency, enhances pricing accuracy, reduces post-harvest losses, and creates a trusted connection between farmers and buyers based on quality and location-specific data

IMPACT

1. 48000+ Farmers benefitted
2. 15% increase in Farmers income per acre.
3. Reduction in maize waste from 22% to less than 5% in the entire sales cycle pre- and post-harvest.
3. 12000+ Services provided till now
4. Presence in India: 5+ States

END USERS/CUSTOMERS:

1. Maize farmers
2. Maize-utilizing industries like bioethanol, poultry feed, animal feed, and starch processing industries

START-UP WEBSITE

https://rootsgoods.com/

PATENTS FILED

Indian Patent Application No.: 201841036367 (Granted) and 202241063215;
PCT international application No.: PCT/IB2020/052796;
Indian Trademark Number: 5072881

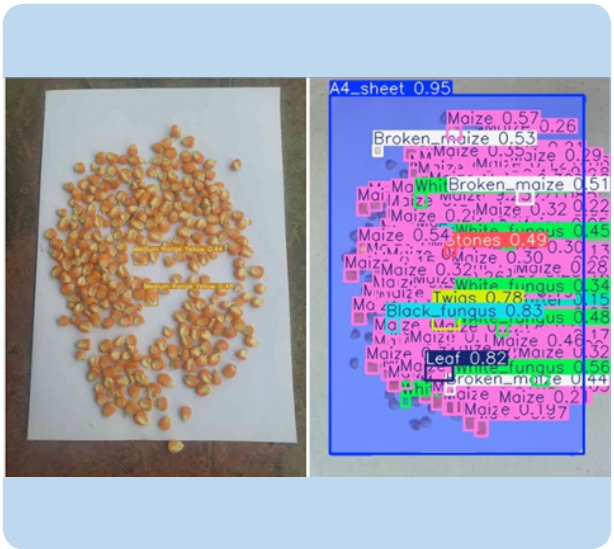
PROBLEM ADDRESSED

Traditionally, maize quality is evaluated visually, leading to inconsistencies, disputes, and inefficiencies in trade. Farmers often lack clarity about the exact quality of their produce, limiting their ability to negotiate fair prices. At the same time, buyers face uncertainty regarding the quality of maize they receive, resulting in financial losses due to loss of maize in the supply chain and during warehouse storage. The solution addresses the core problem of subjective and inconsistent maize quality assessment at the farm level, which significantly impacts pricing, storage, and sales decisions

YEAR OF INCORPORATION

2018

PRODUCT IMAGES:



Registered name: Tan90 Thermal Solutions Pvt. Ltd.

Brand name of the start-up: Tan90

Founder(s) Name: Soumalya Mukherjee

Category: Food Supply Chain

Technology Readiness Level (TRL): TRL 9: Commercialization in actual operational environment

START-UP OVERVIEW

Tan90 Thermal Solutions is a Chennai-based cleantech startup developing energy-efficient thermal management solutions. It offers innovative phase change material (PCM)-based cooling systems that enable cold chain logistics without relying on ice or diesel-based refrigeration, helping industries reduce carbon footprint, cut costs, and maintain optimal temperature during transport and storage.

ABOUT THE TECHNOLOGY

Given the COVID19 scenario, the demand for refrigerated transport and storage exploded globally, with customers preferring retail food to restaurants. Hence, it is important for building infrastructure that can limit the food wastage along the supply chain and cold storage is one of the solutions. However, in most cases, a centralized cold storage model is followed where farmers and aggregators have to come to local cold storage.

IMPACT

1. 10000+ farmers benefitted.
2. Units Deployed: more than 50,000
3. Supported by: BIRAC, UNIDO
4. Presence in India: PAN India, exporting to Philippines, UAE

END USERS/CUSTOMERS:

Marginal Farmers

START-UP WEBSITE

https://www.tan90thermal.com/

YEAR OF INCORPORATION

2019

PATENTS FILED

Patent in process

PROBLEM ADDRESSED

Given the COVID19 scenario, the demand for refrigerated transport and storage exploded globally, with customers preferring retail food to restaurants. Hence, it is important for building infrastructure that can limit the food wastage along the supply chain and cold storage is one of the solutions. However, in most cases, a centralized cold storage model is followed where farmers and aggregators have to come to local cold storage. This model leaves out a majority of the small scale and marginal farmers.

PRODUCT IMAGES:

RICH
Research and Innovation Circle of Hyderabad

COLDEASY

Registered name: Temperate Technologies Private Limited

Brand name of the start-up: ColdEasy

Founder(s) Name: Vishal Singhal

Category: Storage & logistics

Technology Readiness Level (TRL): TRL 8: Pre-Commercialization – Technology is ready for full-scale application

START-UP OVERVIEW

Temperate Technologies provides affordable cold storage and cold chain solutions to farmers, aggregators, and retailers of fruits, vegetables, and flowers. The solutions maintain the freshness and increase the shelf-life of perishable crops, reduce weight loss and wastage, decrease costs and increase incomes. The solutions are based on proprietary low-power cooling technologies that are suitable for solar-powered installations. The solutions are designed for the Indian conditions considering the supply chains and retail conditions.

ABOUT THE TECHNOLOGY

The cold room solution is based on a new low-power cooling technology called dew point cooling that uses 85% less energy than traditional refrigeration-based cold storage solutions. Dew point cooling is a proprietary technology that cools close to the dew point temperature of the ambient and maintains high humidity. We have filed four patent applications on it, out of which 2 have been granted.

The cooled micro-storage solution uses proprietary SEEC (Structurally-Enhanced Evaporative Cooling) technology. SEEC creates a stream of cold and humid air completely passively, without any electricity. It does this by utilizing the pressure difference created by evaporation of water. SEEC enables cooling 3.5 times faster than standard evaporative cooling implemented in zero-energy-cool-chambers.

IMPACT

1. More than 1,200 farmers benefitted.
2. 80% decrease in weight loss, 85% decrease in energy consumption
3. More than 50 units of cold room, More than 150 units of cooled micro-storage,15 units of Mushroom growing chambers deployed till date.
4. Presence in India: 6+ States

END USERS/CUSTOMERS:

1. Farmers
2. Aggregators and retailers of fruits, vegetables and flowers

START-UP WEBSITE

https://www.coldeasy.in/

YEAR OF INCORPORATION

2017

PATENTS FILED

5 patents filed. 2 granted

PROBLEM ADDRESSED

There are more than Rs 1.5 lakh crore worth of annual post-harvest losses in our country. It is a significant problem and affects the poorest farmers who grow most of the vegetables that we consume. A significant part of these can be eliminated with affordable cold storage and cold chain solutions.

Lack of affordable cold storage also impacts the street vendors of fruits, vegetables, and flowers. Traditional refrigeration based cold storage solutions are energy-intensive and not suitable for Indian context.

The problem directly impacts more than 4 crore farmers and 50 lakh street vendors of local fruits, vegetables, and flowers.

PRODUCT IMAGES:

BCKIC
Bhubaneswar City Knowledge Innovation Cluster Foundation

THINKRAW INNOVATIVE
Young . Dynamic . Reliable

Registered name: Thinkraw Innovative Solutions Pvt. Ltd.

Brand name of the start-up: DHIVARA MITRA

Founder(s) Name: Minushri Madhumita

Category: Allied Activities

Technology Readiness Level (TRL): TRL 8: Pre-Commercialization – Technology is ready for full-scale application

START-UP OVERVIEW

Thinkraw Innovative Solutions Pvt. Ltd. is a technology-driven startup offering sustainable and smart solutions across energy, environment, and agriculture sectors. The company focuses on developing innovative products integrating IoT, AI, and data analytics to promote efficiency, resource optimization, and circular economy practices for a cleaner and smarter future.

ABOUT THE TECHNOLOGY

The proposed innovation is an integrated IoT-enabled, solar-powered navigable solution designed to optimize the growth environment for fish and prawn farming. The integrated solution as DHIVARAMITRA ensures the uniform distribution of feed across the pond, promoting even growth and reducing feed wastage. It also helps in monitoring and maintaining the requisite level of Dissolved Oxygen (DO) level and pH level of the farm water, creating an ideal ecosystem for aquaculture activities. By minimizing the reliance on diesel-powered aeration systems and reducing human labor dependency, DhivaraMitra not only lowers operational costs but also enhances sustainability, making fish and prawn farming activities more economical, efficient and eco-friendly.

IMPACT

1.6400+ farmers benefitted
2. 50-60 % less in production cost
3. 20-30 % enhanced harvest and productivity both quality and quantity wise
3. 12 unites deployed till date.
4. Presence in India: 3+ states

END USERS/CUSTOMERS:

1. Brackish water farmers
2. Freshwater aqua farmers
3. FPOs
4. Contractors
5. Govt bodies

START-UP WEBSITE

https://www.thinkrawinnovations.com/

YEAR OF INCORPORATION

2021

PATENTS FILED

Patent-510507

Design - 394976-001

PROBLEM ADDRESSED

The aquaculture industry faces significant challenges, including high morbidity and low survival rates among fish and prawn stocks, resulting in reduced production levels in farms. This issue is compounded by the drudgery and heavy reliance on human labor for farm operations, particularly in tasks such as manual feed dispersal and paddler-based aeration, which leads to high diesel costs. The uneven growth of fish and prawn stocks, along with feed wastage, further exacerbates inefficiencies in production. These challenges highlight the need for innovative solutions to improve farm productivity, reduce labor dependence, and optimize resource usage for sustainable aquaculture.

PRODUCT IMAGES:

Registered name: Varaha ClimateAg Pvt Ltd

Brand name of the start-up: Varaha

Founder(s) Name: Madhur Jain
Ankita Garg
Vishal Kuchanur

Category: Sustainability and waste management

Technology Readiness Level (TRL): TRL 9: Commercialization in actual operational environment

START-UP OVERVIEW

Varaha is Asia's leading climate-tech company dedicated to high-integrity, nature-based carbon removal. We develop and implement scientifically rigorous projects across four key pathways: afforestation, reforestation and revegetation (ARR), regenerative agriculture, biochar, and enhanced rock weathering (ERW). This integrated approach combines on-ground execution with advanced monitoring technologies to deliver scalable, traceable, and durable climate impact while enhancing smallholder livelihoods. The company operate in partnership with over 100,000 smallholder farmers and more than 100 implementation partners, covering over 1.1 million acres of active project area.

ABOUT THE TECHNOLOGY

The Proprietary digital MRV stack leverages mobile apps, IoT and Remote Sensing (RS) for data accuracy and carbon estimation.
Data Collection: Mobile Apps for surveyors to collect geotagged, time-stamped field data.
Automated Validation: Advanced RS-based models for efficient risk assessment of land parcels.
Manual Validation: Internal web platform for human-in-the-loop verification processes for farm monitoring and data integrity

IMPACT

1. Over 100,000+ smallholder farmers onboarded
2. 5-10% decrease in costs, 10-15% increase in yield - along with carbon revenue and increased farmer income
3. Over 28 models, including 8 Baseline Evaluation, 8 Non-Permanence Risk, and 12 Practice Validation/Monitoring models
4. Over 1 million acres of farmland onboarded

END USERS/CUSTOMERS:

1. Project Financiers
2. Direct Carbon Credit Buyers
3. Smallholder Farmers
4. NGOs, FPOs, Local Partners

START-UP WEBSITE

https://www.varaha.earth/

PATENTS FILED

NA

PROBLEM ADDRESSED

Agriculture is a major contributor to GHG emissions, while farmers—especially small and marginal holders—face increasing climate vulnerability and declining ecosystem health. Soil degradation and inefficient practices further weaken resilience and productivity. At the same time, the inclusion of fragmented and marginalized farmers in carbon markets remains limited, as they often lack access, awareness, and support systems needed to participate meaningfully in climate-finance mechanisms.

YEAR OF INCORPORATION

2022

PRODUCT IMAGES:

BCKIC
Bhubaneswar City Knowledge Innovation Cluster Foundation

villamart®

Registered name: Villamart Pvt Ltd

Brand name of the start-up: Villamart

Founder(s) Name: Ramesh Biswal

Category: Food Supply Chain

Technology Readiness Level (TRL): TRL9. Commercilisation & Revenue generation stage

START-UP OVERVIEW

Villamart is a rural e-commerce startup that connects village communities directly with producers and markets through digital technology. It enables doorstep delivery of essential goods, promotes local entrepreneurship, and supports farmers and artisans by creating sustainable livelihood opportunities in rural areas through an inclusive, last-mile supply chain model.

ABOUT THE TECHNOLOGY

1. Technology enabled Mobile Outlet
2. State of art procurement cum fulfilment centre
3. Cleaning of vegetables from Chemicals & pesticide
4. Multi-weather solar dryer to reduce farm wastage

IMPACT

1. Works with over 15,000 farmers (and ~3,000+ villages), partners with ~50 Farmer Producer Companies (FPCs) and ~60 Self-Help Groups (SHGs).

2. Price benefit to farmers: reports paying farmers ≈20% above local market rates for produce.

3. Physical footprint / distribution: operates a fleet of 7 mobile vans (mobile "Gaon Haat" outlets) serving rural localities and urban customers.

4. Product range in mobile outlets: each mobile outlet stocks ~300+ SKUs (fresh produce + staples + household items).

END USERS/CUSTOMERS:

1. Farmers/FPOs/SHGs
2. Regular consumers
3. HoReCa units

START-UP WEBSITE

www.villamart.in

YEAR OF INCORPORATION

2017

PATENTS FILED

Trademarks: 3534582, 4248913

Indian Patent: 202231005018, 202231006317

PROBLEM ADDRESSED

Farmers often find themselves compelled to engage in distress selling due to various factors, including fluctuating market prices and limited access to suitable marketplaces. The lack of proper storage facilities, transportation options, and market information exacerbates the problem of wastage of materials. In addition there are many SGHs which remain untapped. Finally, for the consumers there is a dearth of getting genuine Products.

PRODUCT IMAGES:

RICH
Research and Innovation
Circle of Hyderabad

The startup data presented in this compendium has been organized, and consolidated by RICH, following a structured and methodical compilation process.

For any query, reach out to - **mngr-ab-rich@telangana.gov.in**