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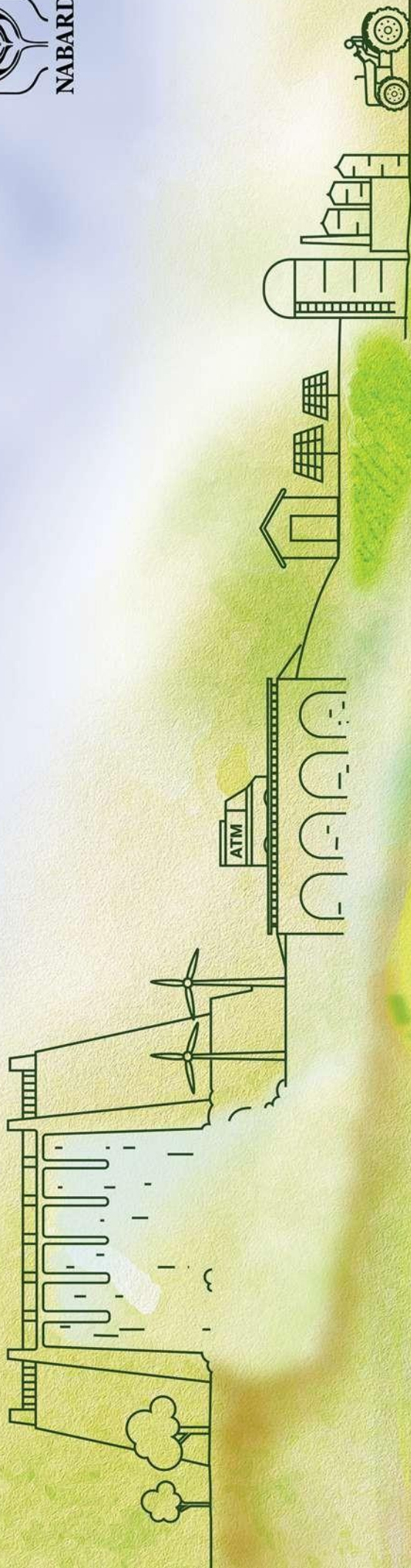


Look East AgTech Summit 2025

**Fostering Innovation,
Investment &
Collaboration**
in East and NE India

 14th May 2025 (Wed)





Transforming Rural India, Transforming Lives

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1. Introduction

India's AgTech revolution is transforming the agricultural sector through precision technologies, AI-driven advisory systems, sustainable input innovations, and smart supply chains. Yet, Eastern and Northeastern India, despite being agriculturally rich and ecologically diverse, remain underrepresented in this transformation. The region continues to face systemic barriers, including limited access to institutional capital, fragmented incubation support, and a relatively low density of startups and accelerators.

To bridge this gap and unlock the region's vast potential, The Bengal Chamber of Commerce & Industry, in collaboration with ThinkAg, convened the Look East AgTech Summit (LEATS) 2025 on 14th May 2025 at the Biswa Bangla Convention Centre, Kolkata. The summit aimed to catalyze a new era of technology-led, climate-resilient, and inclusive growth in Eastern India's agri and allied sectors by fostering multi-stakeholder collaboration and regional innovation.

This summit convened a distinguished assembly of stakeholders, including farmer collectives, startups, scale-ups, policymakers, government institutions, corporates, financial institutions, investors, incubators, mentors, ICAR institutes, agricultural universities, IITs, IIMs, CSR foundations, and grassroots organizations. Participants represented a wide geography, representing a diversity which enabled a truly global exchange of insights and opportunities. The summit was further strengthened by the presence and partnership of institutions and enterprises such as State Bank of India, NABARD, PAN Seeds, Safe Agritrade, ClimaCrew, and Aqua Doctor Solutions—each contributing to the development of innovative, region-specific solutions for smallholder farmers and agri-entrepreneurs. From sustainable aquaculture to weather-smart advisory platforms, their contributions exemplified the kind of scalable, impact-driven innovation LEATS seeks to promote.

Through curated panel discussions, breakout sessions, exhibitions, and stakeholder networking, LEATS 2025 positioned itself as the premier platform to reimagine the agricultural future of Eastern India.



2. Objective

The Look East AgTech Summit 2025 (LEATS) is conceived as a collaborative platform to catalyse transformation across Eastern India's agri and allied sectors. The key objectives of this summit are as follows:

- **Facilitating Cross-Sectoral Convergence:** To break institutional and sectoral silos by bringing together diverse stakeholders from startups and farmer collectives to government agencies, investors, academia, and corporates onto a common platform for open dialogue and collective problem-solving.
- **Enabling Knowledge Exchange and Sectoral Insights:** To gain actionable insights and foster learning through curated panel discussions, expert deliberations, and thematic sessions covering breakthrough innovations, government interventions, emerging trends, and replicable use cases.
- **Showcasing Innovations and Scalable Solutions:** To offer a high-visibility platform for AgTech startups and innovators to exhibit cutting-edge technologies, services, and solutions that hold the potential to disrupt and reimagine traditional agri-value chains.
- **Strengthening Access to Industry and Capital:** To enable seamless engagement with industry leaders and financial institutions, thereby unlocking access to investment opportunities, lending instruments, and market entry pathways for early-stage and growth-stage enterprises.
- **Fostering Strategic Collaborations:** To build need-based convergence among ecosystem actors through structured networking opportunities and to catalyse customised, cross-sector partnerships with long-term developmental impact.



3. Inaugural Session

Revitalizing Eastern India through Innovation and Collaboration:

Jayanta Chakraborty, Chairperson, Agri-Horti-Food Processing-Rural Development National Committee, The Bengal Chamber of Commerce and Industry



Welcome Address by Jayanta Chakraborty, Chairperson, Agri-Horti-Food Processing-Rural Development National Committee, BCC&I

Mr. Jayanta Chakraborty emphasized that the Look East AgTech Summit 2025 symbolically and substantively aimed to spotlight and strengthen the Eastern region's agri-innovation potential. In contrast to the startup density in the western and southern parts of India, he noted that eastern India still lags in startup adoption and ecosystem development.

To address this gap, The Bengal Chamber and ThinkAg joined forces to accelerate ecosystem development by bringing together stakeholders from academia, research, finance, agribusiness, and innovation. Mr. Chakraborty identified inadequate access to credit and limited exposure to industry networks as major impediments to growth for agri-startups in the East. Highlighting the region's strengths, he pointed to the presence of renowned institutions such as IITs, IIM Calcutta, Jadavpur University, Calcutta University, ISI, IISER, and several agricultural universities in West Bengal and the Northeast. He asserted that these knowledge institutions are central to seeding innovation and entrepreneurship in the region.



It has been further noted that despite India being a young country with an average age of 28, the average age of Indian farmers remains around 50. This generational gap in agriculture underscores the urgency for youth engagement and technology adoption. Citing water management and post-harvest storage as key challenges, he called for scalable local innovations in biologicals and supply chain efficiency. Mr. Chakraborty concluded by urging all stakeholders to embrace a collaborative approach to increase visibility, improve the supply chain, and create an enabling ecosystem for agri-startups to thrive in the East

**Building a Stronger AgriTech Ecosystem in Eastern India:
A Mission in Motion Hemendra Mathur, Co-Founder,
ThinkAg**



Mr. Hemendra Mathur set the context by outlining ThinkAg's role as a non-profit platform driving agricultural innovation through research, partnerships, pilots, and curated events. Mr. Mathur emphasized that although India boasts over 10,000 registered agritech startups, only around 2,000 have achieved product-market maturity. A significant majority of these startups are concentrated in South and West India, with Bangalore, Hyderabad, Pune, and Delhi NCR emerging as major hubs.

He stressed that Eastern India, with its agricultural potential, remains underrepresented in this startup landscape. The objective of the summit, therefore, is to foster a comprehensive ecosystem in the East by bringing together innovators, policymakers, incubators, accelerators, grassroots organizations, investors, and FPOs.



Mr. Mathur highlighted that this summit was just the beginning of a longer-term vision to develop a pan-regional agritech ecosystem encompassing West Bengal, Bihar, Jharkhand, Chhattisgarh, the Northeastern states, and even neighboring countries. As part of this broader mission, he noted the intention to co-host more thematic events focused on value chains like makhana and others specific to Eastern India.

Catalyzing Financial Linkages for Agri Startups – The Role of Banks in Supporting Agritech: Alok Jain, Deputy General Manager, ABU & GSS, State Bank of India



Mr. Alok Jain delivered the keynote address, reflecting SBI's long standing partnership with The Bengal Chamber of Commerce and Industry. He outlined SBI's numerous initiatives in collaboration with BCC&I, including farmer meets, FPO outreach programs, horticulture workshops, and trade linkage platforms. It has been highlighted that the Look East AgriTech Summit 2025 as a timely initiative to foster convergence among farmers, startups, corporates, and government institutions.

Highlighting West Bengal's agricultural strength, Mr. Jain noted that the state is the leading producer of vegetables, second-largest in potato, and accounts for 26% of India's total tea production. He outlined several state and central government efforts aimed at boosting crop diversification, mechanization, and organic farming. Platforms like eNAM, he said, are enhancing price transparency and direct market access for farmers.



He also emphasized how lifestyle changes and demand for convenient processed foods are creating new opportunities in the agri and food processing sectors. However, unorganized micro food processing units need targeted support in the form of skilling, entrepreneurship, technology, marketing, and credit.

Mr. Jain pointed to SBI's proactive role in deploying credit through schemes such as AIF (Agriculture Infrastructure Fund), AHIDF (Animal Husbandry Infrastructure Development Fund), and other government schemes. In the previous financial year alone, more than 1,200 farmers had benefited through SBI credit under these programs. He reaffirmed SBI's commitment to supporting such collaborative initiatives and driving sustainable growth in the agriculture sector.



4. Panel Discussion 1

Doing Business in East–Navigating Challenges and Seizing Opportunities

Speakers:

Sudhakar Rao Desai, CEO, Emami Agrotech

Alok Marodia, MD, PAN Seeds

Ritum Jain, Chief Executive Officer, Safe Agritrade

Amit Patjoshi, CEO, Palladium India

Moderator:

**Ambarish Dasgupta, Senior Partner, Intueri Consulting,
Former President, BCC&I**



**Panel Discussion 1:
Doing Business in East– Navigating Challenges and Seizing Opportunities**

“ Bengal has always had a romance with agriculture but this romance hasn’t transformed into a strong economic base .” With these insightful words, **Ambarish Dasgupta, Senior Partner, Intueri Consulting & Former President, BCC&I**, opened the first panel discussion of the Look East AgTech Summit 2025. Moderated by Mr. Dasgupta, the discussion covered ten primary thematic areas: structural constraints, climate vulnerability and adaptation, market linkages and value chains, capital and financial access, technology and innovation, agri-processing and manufacturing, role of organic farming and carbon markets, impact of tariff regimes, public-private partnerships (PPPs), and the growing shortage of labour and agri-skills in Eastern India.

Mr. Dasgupta highlighted the paradox that while Bengal’s literature, music, and cultural imagination have long been intertwined with rural life and farming, this emotional affinity has not evolved into an economically robust and industrially advanced agri-sector. He underscored that 92% of arable land in Bengal is already under cultivation, leaving little room for expansion and making productivity enhancement and diversification the key focus areas.



Ambarish Dasgupta
Senior Partner, Intueri Consulting & Former President, BCC&I

The Need for Diversification and Strategic Trade

Sudhakar Rao Desai, CEO of Emami Agrotech, began by pointing out the structural imbalance in West Bengal's agri-economy, with only 9% of its agricultural GDP coming from food processing, significantly below the national benchmark. He asserted that in a state with limited cultivable land and a surplus of rice production, diversification into high-value crops and allied activities must take center stage.

Mr. Desai further emphasized the importance of navigating global trade mechanisms, noting that no state is insulated from the effects of Free Trade Agreements (FTAs). He called on West Bengal to leverage its strategic location as a port gateway to Southeast Asia, Nepal, and Bhutan, and to actively pursue enabling trade agreements that can enhance market access for local agri-produce and processed goods.

Efficient Seed Use and the Challenge of Productivity

Alok Marodia, Managing Director of PAN Seeds, presented a more optimistic picture. He clarified that Bengal's Seed Replacement Rate (SRR) is often misrepresented; while official figures cite ~22%, actual usage patterns suggest an SRR of 45–50%. This is evident in the rise of Eastern India's food production from 92 million tonnes to 112 million tonnes in just a decade.

He further explained that West Bengal's relatively lower productivity, compared to states like Punjab and Telangana, stems not from farmer inefficiency but from lack of Minimum Support Price (MSP) assurance, which discourages input investments. In Punjab, where farmers have assured buyers through the mandi system, they are incentivized to invest heavily in fertilizers and other inputs, a benefit still lacking for Bengal's farmers.

Export Geography and the Standards Barrier

Ritum Jain, CEO of Safe Agritrade, mapped India's agricultural export landscape. He stated that India's agri-exports largely go to the Middle East, Southeast Asia, the EU, and Africa, with UAE being a major importer due to a large Indian diaspora, shared taste preferences, and relatively lenient quality regulations.

Mustard oil is Bengal's heart, but 95% of it is processed elsewhere. Why can't we build the crushing infrastructure here?

– Sudhakar Rao Desai,
CEO Emami Agrotech

”

It all starts with the seed. Once that is profitable, the rest of the value chain falls in place.

– Sudhakar Rao Desai,
CEO Emami Agrotech

”

He warned, however, that expanding exports to high-value markets like the EU and US would require significant governance reforms. Stringent standards around packaging, pesticide residue, and certification are barriers that Bengal must address through better compliance mechanisms and quality assurance frameworks.

Building an Ecosystem: Treating Farmers as Partners

Amit Patjoshi, CEO of Palladium India, drew from his extensive policy consulting experience to propose an ecosystem approach to agricultural transformation. He asserted that the traditional view of farmers as subsidy recipients must be replaced with a model that treats them as equal partners in value chains.

Mr. Patjoshi laid out a robust framework for evaluating FPOs (Farmer Producer Organisations) based on metrics such as:

- Buyer diversification
- Women's participation
- Climate resilience and sustainability
- Institutional strength
- Delivery mechanisms
- Receptiveness to partnerships

He highlighted his firm's work in Odisha with tribal women FPOs successfully exporting products like jackfruit, papaya, and mangoes, and advocated for scaling such models across Eastern India.

Climate Resilience through Seed Innovation

In response to a question by the moderator on climate risks, **Mr. Marodia** outlined the role of seed innovation in adaptation. He described ongoing R&D efforts to create drought-tolerant, flood-tolerant, and salinity-resistant seed varieties, enabled by gene editing, climate modelling, and speed breeding techniques. These technologies are being developed and tested across multiple agro-ecological zones to ensure wider adaptability.

Contract Farming, Mustard Oil & Rice Bran – Untapped Opportunities

Mr. Desai revisited the potential of contract farming to improve price assurance and productivity, especially in crops like potatoes, oilseeds, and mustard. He noted that Bengal consumes 60% of India's mustard oil but produces only 5%, necessitating large-scale imports.

The farmer must not be subsidy-ridden but empowered to chart their own business course.

– Amit Patjoshi,
CEO, Palladium India



He called for focused R&D and contract production models to revive mustard cultivation in the state.

Likewise, rice bran, a by-product of Bengal's massive rice mills, is vastly underutilized. He argued that rice bran oil has immense nutraceutical value due to its high oryzanol content, but poor post-harvest management and lack of processing infrastructure are leading to wastage. He recommended investments in bran stabilization technologies to unlock this hidden potential.

Technology Adoption and Capital Infusion

While Eastern India has seen slow but steady adoption of agri-tech solutions, panelists stressed that the focus must shift from technology availability to adoption. Farmers need to see tangible value addition to embrace AI tools, weather advisories, and digital platforms.

Mr. Patjoshi highlighted that over USD 25 million in private investment has recently flowed into Eastern India through blended finance platforms to support export infrastructure, digital traceability, and input access. He stressed the need for outcome-focused investment and public-private co-creation of value chains.



Conclusion

The panel discussion concluded on a hopeful note, reiterating that Eastern India holds immense untapped potential. With fertile soil, abundant labour, and a growing policy focus, the region is well-positioned to transition from subsistence farming to a self-sustaining, high-value agricultural economy. The key lies in quality inputs, resilient seeds, institutional partnerships, compliance frameworks, and a bold ecosystem mindset. In the moderator's concluding words: **"This discussion must be taken forward in the upcoming policy paper, and we hope these insights will shape the future of agriculture in Eastern India."**



Panel 1



5. Panel Discussion 2

Mechanisation & Tech- Transforming the Tea Industry

Speakers:

Joydeep Phukan, Secretary & Principal Officer, Tea Research Association of India

Bijoy Gopal Chakraborty, President, Confederation of Indian Small Tea Growers Associations

G. Sundarrajan, CEO, Surinova

Rajiv Mondal, CEO, Arogyam Medisoft Solution

Vinay Jaju, Co-Founder, SwithON Foundation

Moderator:

S Soundararajan, Director - Tea Development, Tea Board, India



**Panel Discussion 2:
Mechanisation & Tech- Transforming the Tea Industry**

Moderated by S. Soundarajan, Director – Tea

Development, Tea Board of India, this panel discussion brought together voices from research, industry, startups, and grassroots farmer networks to explore the scope and implementation of technology in the highly labour-intensive tea industry. The discussion emphasized how mechanisation, AI, clean energy, and digital traceability can transform tea cultivation, processing, and market access.



S. Soundarajan
Director – Tea Development, Tea Board of India

Mechanised Harvesting and Clone Innovation

The session began with **Mr. Joydeep Phukan, Secretary & Principal Officer, Tea Research Association of India**, outlining the historical and current challenges of mechanisation in tea. He revealed that mechanisation trials had started as early as 1955 but were shelved due to an abundance of labour at the time. With the advent of MGNREGA and rising labour costs, labour shortages became a reality, especially during peak plucking seasons.

Mr. Phukan detailed the Association's collaboration with Japanese firms like Kawasaki Kiko and Ochiai to introduce one-man and two-man plucking machines, along with the development of lightweight shears. He shared that over 50% of tea estates now use these machines. However, plantations still struggle due to unsuitable plant architecture. To address this, the TRA is working on developing erect-growing tea clones that can withstand mechanical harvesting, minimize dieback, and maintain plucking quality.

Small Growers and the Promise of Regenerative Tech

Mr. Bijoy Gopal Chakraborty, President, Confederation of Indian Small Tea Growers Associations, emphasized the cost disparity between large estates and small growers, largely due to limited mechanisation. He introduced key technologies being adopted by small growers, such as:

- AI-based moisture meters with real-time pH detection
- Use of Israel-based weather stations (52 already installed) for weather forecasting
- Integration of regenerative agriculture practices to ensure sustainability

He emphasized the potential of carbon credits through digital mapping and the importance of post-plucking handling in maintaining green tea quality. Notably, he revealed that small growers in India have launched their own brand, "Teasta", inspired by successful cooperative branding models in Kenya.

Robotic Harvesters and HaaS: The Future of Scalable Mechanisation

Mr. G. Sundararajan, CEO, Surinova, showcased their innovation: robotic harvesters tailored for Indian terrains. Unlike Western machines designed for large, flat farms, Surinova's machines are:

- Small, smart, and terrain-adaptable
- Data-rich and sensor-driven
- Equipped with a unique 8-wheel model to navigate Bengal's drainage lines

He introduced the **Harvesting-as-a-Service (HaaS)** model—similar to Software-as-a-Service (SaaS)—where factories could purchase robots and rent them to small growers who cannot afford them outright. He made a key distinction: while robotic pickers are expensive, robotic harvesters reduce costs significantly, offering viable mechanisation at scale. He sheds light on the fact that although the robots can adjust to certain conditions, field adaptation is the way forward for technology adoption.

AI-Based Pesticide Detection and Compliance Technology

Mr. Rajiv Mandal, CEO, Arogyam Medisoft Solutions, introduced Activia, an AI-enabled biosensor-based device that detects pesticide residue at the green leaf stage. He highlighted the significance of such tools in light of stringent

Despite contributing over 50% of India's tea, small growers still remain anonymous suppliers. Branding is the next frontier.

– Bijoy Gopal Chakraborty, President, Confederation of Indian Small Tea Growers Associations

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For tea, there is traditional knowledge in harvesting. We have taken that knowledge and incorporated it into our machines

– Bijoy Gopal Chakraborty, President, Confederation of Indian Small Tea Growers Associations

”

global export norms, where even minute levels of pesticide contamination can lead to consignment rejection. He further elaborated on future applications including:

- Precision spraying only in affected zones
- Detection of aroma, moisture, and texture for better quality control

Renewable Energy for Harvest and Post-Harvest Phases

Mr. Vinay Jaju, Co-Founder, SwitchON Foundation, shed light on the erratic electricity supply in tea growing regions like North Bengal, which affects productivity and living standards. He proposed a solar-based decentralised energy model tailored for:

- Solar-powered irrigation pumps: proven to double farm income within a year
- Solar dryers: reducing drying time by 50% and improving quality
- Agrivoltaics: dual land use for tea and solar power

He called for policy revisions to include small tea growers in agriculture-linked solar subsidy schemes, as they are currently left out due to classification loopholes.

Diversification and Value Addition: The Way Forward

Mr. Joydeep Phukan returned to address the growing global surplus in tea production, which is rising at 7–8% annually, while consumption is increasing by only 2–3%. He suggested a strategic pivot toward:

- Theaflavin extraction: high-value antioxidants yielding INR 3500/hectare as opposed to INR 500/hectare for traditional tea
- Decaffeinated tea: increasingly popular among health-conscious youth
- Wellness-oriented nutraceuticals derived from tea polyphenols

He also emphasized the urgent need for market diversification, following the examples of China and Japan, where tea is being used in functional foods, cosmetics, and beverages.



Training, Branding, and Market Strategies for Smallholders

Mr. Chakraborty stressed the importance of training and sensitisation programs to enable small growers to keep pace with rapid tech changes. Sharing the success of Teasta, he highlighted the need for domestic and export branding support. Mr. Mandal added that with digital mapping and remote-sensing, growers can reduce chemical overuse and improve crop-specific strategies.

Audience questions led to discussions around setting up allied industries, such as blending and nutraceuticals, similar to the dairy sector. The panel acknowledged the need for R&D-backed startups to explore new tea-based product verticals and agreed on the importance of institutional support to upscale such ventures.

Conclusion

The session concluded with the panel unanimously agreeing that diversification, digitisation, and decentralised energy are the pillars on which the future of India's tea industry rests. Speakers called for collaborative models, public-private partnerships, and tech-focused training to empower both large estates and smallholders alike. As Mr. Phukan proposed: "We must explore using solar panels as shade trees—let every square foot of tea land add economic value." The tea sector, with its deep legacy and evolving challenges, stands at a crossroads. Through innovation, inclusion, and investment, it can reclaim its place as a leading and sustainable pillar of Eastern India's agri-economy.



Panel 2

6. Panel Discussion 3

Achieving Financial Inclusion – Will Partnerships with Agri Startups Bridge the Gap?

Speakers:

Dharmendra Beuria, DGM, Rural MSME Department, NABARD

Sunil Kumar Tadepalli, Chief of Partnerships, Avanti Finance

Dinesh Kumar Bhardwaj, AGM, ABU & GSS, State Bank of India

Moderator:

Anil Kumar S G, Founder and Group CEO, Samunnati



Panel Discussion 3:
Achieving Financial Inclusion – Will Partnerships with Agri Startups Bridge the Gap?

Exploring the Potential of Startup Partnerships to Close the Credit Gap

The session opened with **Anil Kumar S G, Founder and Group CEO of Samunnati**, laying out the objectives of the discussion. He highlighted three key themes: understanding what has worked in startup-finance partnerships, co-creating scalable models for underserved regions—particularly Eastern India—and exploring climate-smart financing solutions. Mr. Kumar noted the stark regional disparities in financial inclusion, with only 18% of cultivated zones in Eastern India having institutional credit access, and only 60% of India's startups present in the region. The discussion aimed to uncover ways in which collaborative models can bridge these disparities and unlock financial inclusion.



Anil Kumar S G
Founder and Group CEO of Samunnati

NABARD's Perspective: Strengthening Rural Credit through Technological Partnerships

Dharmendra Beuria, DGM, Rural MSME Department, NABARD, underlined the shift in NABARD's focus from merely enhancing formal finance access to ensuring universal financial inclusion. He emphasized that remote and underserved geographies require innovative credit delivery models and that agri-startups can serve as vital conduits for translating technology into tailored financial products for last-mile customers. NABARD is leveraging its institutional platform to foster innovation and deepen outreach by investing in equity partnerships with startups working in areas such as blockchain, agri-supply chains, and rural marketing. Mr. Beuria also highlighted the operationalization of the Rural Business Incubation Centre (RBIC) at IIT Kharagpur

We have shifted from promoting formal banking to ensuring universal financial inclusion.

- Dharmendra Beuria,
NABARD

”

where more than 100 startups have been incubated, and mentioned NABARD's dedicated funding windows to support green financing and sustainability-linked initiatives. He stressed that NABARD is not only a financier but a catalyst for institutional transformation.

SBI's Outreach Strategy: Financing at Scale with Localized Precision

Dinesh Kumar Bhardwaj, AGM, ABU & GSS, State Bank of India, focused on the bank's dual strategy of operational scale and localized precision. He emphasized that despite being India's largest public sector bank, SBI retains the flexibility to cater to local financial needs. SBI has over 25 specialized branches dedicated to startups and priority sectors. Mr. Bhardwaj pointed out that financial literacy and awareness continue to be significant challenges in Eastern India. Many FPOs and startups lack clarity on how to transition from current account holders to formal credit recipients. To address this, SBI has deployed field officers for rural banking services and created dedicated processing cells for evaluating agri-startup proposals. He also cited the use of digital platforms like the Krishi App to deliver advisories, crop monitoring, and input financing. SBI's engagement with the Credit Guarantee Fund Scheme for Micro and Small Enterprises (CSME) and its ₹3 lakh crore+ investment in agriculture and allied sectors were presented as examples of their commitment.

Agri-FinTech Disruption: Co-creating Credit with Data-Driven Precision

Sunil Kumar Tadeballi, Chief of Partnerships at Avanti Finance, brought the fintech perspective to the fore. He noted that Avanti has deployed over ₹600 crore across the East and Northeast with a 99.3% collection efficiency, which debunks myths about the riskiness of financing in these regions. Mr. Tadeballi outlined Avanti's model of applied intelligence, which emphasizes crowdsourced and partner-driven insights over conventional AI models. He explained that by triangulating asset data—like land size, livestock, and machinery—Avanti's algorithm can predict creditworthiness with 57% accuracy. Partnerships with grassroots organizations are central to Avanti's model, enabling tech-enabled yet deeply contextual lending. He also addressed gender inclusion, stating that with male out-migration prevalent in the Northeast, women have emerged as key agricultural entrepreneurs. Avanti is exploring reverse-migration financing models and has launched women-centric financial products.

The bank must see that the startup is financially disciplined. That's the foundation of bankability.

– Dinesh Kumar Bhardwaj, SBI

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Access is more important than cost.

– Sunil Kumar Tadeballi, Avanti Finance

”

Q&A Session: Reflections and Responses

The panel received a series of probing questions from the audience:

Q1: Are we prioritizing quantity (e.g., number of FPOs) over quality and viability?

Sunil Kumar Tadepalli responded that while numbers serve as milestones, true transformation lies in scalable, viable business models where access to finance is more critical than the cost. Dharmendra Beuria emphasized that both quantity and quality must be addressed simultaneously through skilling, linkage, and innovation.

Q2: How well are banks adapting to new technologies in agriculture and aquaculture?

Dinesh Kumar Bhardwaj stated that SBI is proactively using digital platforms like the Krishi App and training its staff to engage with evolving agri-technologies. Mr. Beuria added that NABARD's RBIC platform has been instrumental in identifying and scaling replicable technologies at the grassroots.

Q3: What steps are being taken to attract youth to agriculture, especially given their lack of credit history?

Moderator Anil Kumar acknowledged that thin-file youth remain largely excluded and emphasized the need for youth-centric lending platforms that reward innovation and entrepreneurship over land ownership.

Q4: Can institutions support climate-smart agri-projects, such as methane gas recovery from cow dung?

The moderator recommended routing such proposals through NABARD, which has established green financing initiatives and startup incubation partnerships.



Conclusion

The session concluded with a consensus that true financial inclusion in Eastern India will require not only technology and capital but also trust-based partnerships, contextual intelligence, and an ecosystem approach. Moderator Anil Kumar summed up the discussion by affirming that institutions must leverage each other's strengths—tech platforms, grassroots networks, and sector knowledge—to develop inclusive, scalable financial models. As Mr. Tadepalli aptly noted, "Access is more important than cost. And collaboration is the only way to scale inclusive finance in agriculture."



Panel 3

7. Panel Discussion 4

Facilitating Access to Carbon Credits for Indian Farmers

Speakers:

Tridibesh Bandyopadhyay, Director & CEO, inQube
S. Raja Sekhar Reddy, India Lead – Carbon Program,
nurture.farm

Dr. Sudarshan Dutta, Head – Global Nature-Based
Solutions Program, Kosher Climate

Ekta Jaju, Co-Founder and Executive Director, SwitchON
Foundation

Dr. Phalguni Das Biswas, Founder & Director, Inhana
Organic Research Foundation

Moderator:

Dr. Pradip Dey, Director, ICAR-ATARI, Kolkata



Panel Discussion 4
Facilitating Access to Carbon Credits for Indian Farmers

From Awareness to Action: Streamlining Digital Infrastructure and MRV Systems

Opening the session, **Dr. Pradip Dey** emphasized that carbon markets could play a transformative role in improving rural livelihoods—especially if anchored in smallholder realities. He set the tone by asserting that verifiable indicators, robust MRV systems, and a trust-based ecosystem are indispensable for building a viable voluntary carbon market in India.



Dr. Pradip Dey
Director, ICAR-ATARI, Kolkata

Tridibesh Bandyopadhyay, CEO of inQube, highlighted the growing relevance of digital platforms in carbon projects. He noted that earlier buyer skepticism—largely due to unverifiable data—has prompted a decisive shift toward tech-driven Monitoring, Reporting, and Verification (MRV) systems. A key challenge, he observed, is balancing internal sophistication with external simplicity: “Our MRV platforms must be simple enough for a marginal farmer to use, yet robust enough to ensure credibility and accuracy.”

He explained that scalability is critical—projects below a threshold (typically 7,000–10,000 hectares) are often unviable due to high operational costs. This, he emphasized, necessitates multi-layered digital platforms with modules for FPOs, farm-level supervisors, and smallholders, ensuring a seamless data flow from individual plots to registry submission. Geo-fencing, geotagging, and real-time data authentication are becoming standard practices.

Carbon projects cannot be built on romanticism—they need scale, scientific rigor, and trusted data to become financially viable.

– Tridibesh Bandyopadhyay, CEO, inQube

”

Scalability and Farmer-Centric Design: Lessons from nurture.farm

S. Raja Sekhar Reddy, India Lead – Carbon Program at nurture.farm, provided a field-level perspective on implementing regenerative practices at scale. He shared insights from their AWD (Alternate Wetting and Drying) rice cultivation protocol, noting that while these practices reduce methane and improve soil health, they take at least 2–3 years to yield carbon revenues.

“Our design philosophy goes beyond carbon. Unless farmers see immediate benefits—like water savings or input reduction—they won’t continue,” Reddy stressed. He underlined the need to co-create programs with local stakeholders, ensure continuous handholding, and integrate digital advisories via vernacular apps. Operational challenges, especially behavioral change and site-specific constraints (e.g., waterlogging in West Bengal), require tailored interventions.

Carbon Science and Economic Realities: A Grounded View

Dr. Sudarshan Dutta of Kosher Climate focused on the science-policy-business interface. He clarified that the carbon market’s current structure favors emitters seeking offsets, not smallholders seeking income. “The carbon business is not designed for farmers—it’s designed for polluters. That’s the crux of the problem,” he observed.

Dr. Dutta argued that AWD and other sustainable practices already provide economic and agronomic benefits; carbon revenues, if and when they come, are a bonus. He called for a shift in metrics: success should be measured not only by carbon credits issued but also by cost savings, soil health, and reduced external dependencies. He urged developers to consider quality of verification, context-appropriate modeling, and farmers’ capacity to maintain data logs.

Re-Centering Farmers in the Carbon Narrative

Ekta Jaju, Executive Director of SwitchON Foundation, issued a critical reminder: carbon offset projects must be built with and for farmers. She expressed concern that smallholders are often an afterthought in carbon business models.

Jaju highlighted that many practices promoted under carbon schemes—like AWD—make sense for Indian farmers even without carbon revenue. However, real gains require structural support:

The carbon market is not designed for farmers, it’s designed for polluters.

– Dr. Sudarshan Dutta,
Kosher Climate

”

Let’s not see carbon as a silver bullet. The value lies in good agriculture, and carbon is a co-benefit of doing the right thing.

– Dr. Sudarshan Dutta,
Kosher Climate

”

"If a farmer's field is under water in the monsoon, you can't ask her to practice AWD. Our methodologies must be contextual."

She advocated for participatory project design, continuous feedback loops, and transparent revenue-sharing models. "We must place farmers at the center not as data providers, but as primary beneficiaries," she asserted.

Building Trust and Accountability Through Multi-Stakeholder Ecosystems

Dr. Phalguni Das Biswas of Inhana Organic Research Foundation emphasized the role of validated technologies and harmonized protocols. She outlined a four-tier stakeholder model: (1) Model developers, (2) Farmer-facing implementers (FPOs, NGOs), (3) Verification and certification systems, and (4) Buyers/corporates.

According to her, standardization and simplification are key. She proposed that startups, particularly in Eastern India, should adopt tried-and-tested composting and soil-carbon enhancement technologies and scale them via farmer networks. Linking these to Environmental Credit Mechanisms (ECM) under India's emerging carbon policy framework could unlock greater access to climate finance.

Audience Interaction and Key Takeaways

Several audience members raised critical questions around farmer remuneration and transparency. Responding to a pointed query about actual farmer payouts, Raja Sekhar Reddy clarified that carbon credit payments often begin in the 4th year. Current revenue-sharing models vary (e.g., 75:25 or 60:40 between farmers and project developers), but realization depends on successful issuance and sale of credits.

Dr. Dutta pointed out that no Indian rice-based carbon project has yet yielded significant payouts—highlighting the importance of not overselling carbon as a silver bullet. Others flagged issues with discredited methodologies (e.g., AMS 3.AU for rice) and called for better awareness of rejection risks.

A final set of questions explored whether incubators, NGOs, or government agencies could act as reliable intermediaries to help navigate scheme applications and technology onboarding.



Conclusion

Moderator Dr. Pradip Dey concluded the session by reaffirming the importance of this dialogue: “Carbon credits offer opportunity but only if grounded in farmer realities.” He encouraged stakeholders to view this as a business-to-underdog (B2U) model where equity, contextual design, and collective ownership are non-negotiable.



Panel 4



8. Panel Discussion 5

The Next Aquaculture Hub- Building the Roadmap

Speakers:

Neelkanth Mishra, Founder & CEO, Centre of Aquatic Livelihood- Jaljeevika

Dr. Debtanu Barman, Founder & CEO, Aqua Doctor Solutions

Rohit Priyadarshi, General Manager- Sales & Operations, Aquaconnect

Dr. Gourav Dhar Bhowmick, Assistant Professor, Agricultural and Food Engineering, IIT Kharagpur

Moderator:

Nirmallya Mandal, Co-Founder & Director, Ecociate



**Panel Discussion 5:
The Next Aquaculture Hub- Building the Roadmap**



Mr. Nirmallya Mandal, Co-Founder & Director, Ecociate, set the stage for this crucial discussion by highlighting the remarkable role of Northeastern India in the development of India's aquaculture sector. Framing aquaculture as one of the fastest-growing sectors in the country, he emphasized how the East and especially the Northeast holds unique ecological and socio-economic strengths that must be harnessed through inclusive, sustainable strategies.



Mr. Nirmallya Mandal
Co-Founder & Director, Ecociate

The Untapped Potential of Domestic Aquaculture

Mr. Neelkanth Mishra, Founder & CEO, Centre for Aquatic Livelihoods – Jaljeevika, opened the panel discussion by stressing the urgent need to look at aquaculture through a conservation lens. He startled the audience with the fact that while India produces about 13–14 million metric tonnes of fish annually, nearly 8 million metric tonnes of freshwater fish are consumed domestically with very little being exported. This signals both a constraint and an opportunity.

He reiterated that aquaculture is not just about fish, it is vital for food and nutritional security in rural communities. Crops like lotus stem (kamal kakdi), foxnut (makhana) and singhara grow only in aquatic environments and serve as essential sources of livelihood and nutrition. He pointed out that aquatic diversity is not well documented, and the sector urgently requires policy frameworks that integrate conservation, nutrition, and income generation.



From Knowledge to Enterprise: Bridging the Entrepreneurial Gap

Dr. Debtanu Barman, Founder & CEO, Aqua Doctor Solutions, brought a deeply reflective note to the session by highlighting a cultural mindset barrier: the lack of entrepreneurial ambition among young people in the Eastern and Northeastern regions. Traditionally oriented toward secure government jobs, youth in these regions often avoid entering the value chain as agribusiness entrepreneurs.

He also spotlighted a major challenge plaguing the aquaculture sector in the East: poaching and pond poisoning. These man-made risks are common in states like West Bengal, Assam, and Odisha and severely damage farmers' incomes and morale. Dr. Barman strongly advocated for the adoption of pond insurance schemes tailored to such high-risk geographies. He called for better incubation, mentorship, and microfinance models to support first-generation aquapreneurs.

The Imperative of Technological Contextualization

Mr. Rohit Priyadarshi, representing Aquaconnect, delved into the critical role of technological interventions in transforming smallholder aquaculture. He observed that while advanced technologies like IoT-enabled water monitoring and disease detection systems exist, they are rarely accessible or affordable for marginal farmers in the East and Northeast. Much of the sector still relies on titration-based disease detection methods that are outdated, inefficient, and error-prone.

He emphasized the need for decentralized, cost-effective devices for water quality monitoring and disease surveillance. Highlighting Aquaconnect's work with remote sensing and environment-responsive aquaculture devices, she advocated for inclusive models where farmers "touch, feel, and trust" the technology before adopting it.

Aquaponics, Value Addition, and Biotech Futures

Dr. Gourav Dhar Bhowmick, Assistant Professor, Agricultural and Food Engineering Department, IIT Kharagpur, introduced the audience to emerging concepts such as aquaponics and microbial circularity. He argued that systems like aquaponics, which combine aquaculture with hydroponic farming, are promising in peri-urban and water-scarce regions of the East.

Consider your fish as living ATM machines.

– Dr. Debtanu Barman,
Founder & CEO, Aqua
Doctor Solutions

”

We never think that we can be part of the value chain. Our youth are trained to look for jobs, not to create enterprises.

– Dr. Debtanu Barman,
Founder & CEO, Aqua
Doctor Solutions

”

We throw away 30% of all fish as waste—that's a 3 million metric ton opportunity for byproduct industries.

– Dr. Gourav Dhar
Bhowmick, Assistant
Professor, Agricultural
and Food Engineering,
IIT Kharagpur

”

Dr. Bhowmick also elaborated on using aquaculture by-products in the cosmetic and pharmaceutical industries, urging stakeholders to look beyond traditional value chains. He advocated for dedicated policy and research focus on coldwater aquaculture, wastewater-fed aquaculture, and wetland-based bioeconomies, all areas highly relevant to the Eastern and Northeastern belts.

Ecosystem Building and Inclusion

A key highlight of the panel was its focus on ecosystem-level interventions. Dr. Barman proposed a “Big Bazaar” model of decentralized aquaculture retail and advisory centers across Eastern and Northeastern India to overcome logistical and awareness barriers. He stressed the need to treat aquaculture as a community-driven livelihood ecosystem, not just a production activity.

Mr. Mishra added that inclusive development must recognize the role of tribal communities, who often reside in ecologically rich but institutionally neglected regions. He also emphasized the need to mainstream women in aquaculture, as they often manage seed, feed, and small ponds at the household level but remain outside the formal value chain.

The panel unanimously called for a blue economy framework for the East, specifically targeting:

- Pond insurance and climate resilience
- Seed and feed innovation for saline and flood-prone areas
- Value addition through biotech and nutraceuticals
- Aquaculture-linked waste-to-wealth models
- Institutionalizing “fish-based SHGs and FPOs” with access to microfinance



Conclusion

This panel underlined that the Eastern and Northeastern states of India are not lagging, they are unique. The diversity of water bodies, species, and community knowledge systems in this region is unparalleled. However, to unlock their true potential, there is an urgent need to rethink aquaculture not merely as fish farming but as a cornerstone of the blue economy—one that can deliver nutrition, sustainability, and inclusive growth.



Panel 5



9. Panel Discussion 6

AgBioTech Breakthroughs Disrupting the Input Sector

Speakers:

Devleena Bhattacharjee, Director, ClimaCrew
Dr. Markandeya Gorantla, Executive Chairman & Managing Director, ATGC Biotech
Anup Ganguly, Founder & CEO, Farmology

Moderator:

Debabrata Sarkar, President – Asia Pacific, AlgaEnergy



Panel Discussion 6:
AgBioTech Breakthroughs Disrupting the Input Sector

Reimagining Inputs: Climate-Smart Innovation and Biological Disruption in AgriTech

The session was initiated by **Debabrata Sarkar, President – Asia Pacific, AlgaEnergy**, who set the tone by placing soil health and environmental sustainability at the center of the agri-input revolution. It was noted that modern agricultural innovation must not ignore the foundational layer which is the soil. Mr. Sarkar pointed to alarming rates of soil degradation, warning that without course correction, two-thirds of the world's arable land could become infertile by 2050. He also stressed the potential of soil in combating climate change, noting that 11 out of 25 climate mitigation strategies are linked to healthy soils.

Mr. Sarkar called for disruptive innovation in inputs that reduce chemical dependency, improve productivity, and support climate adaptation. He reminded the audience that while agricultural production has risen over the last two decades, global hunger has not declined proportionately. This, he argued, underscores the need for more equitable and sustainable agri-input systems.



Debabrata Sarkar
President – Asia Pacific, AlgaEnergy

Seaweed Biostimulants and Sustainable Soil Regeneration

Devleena Bhattacharjee, Director, ClimaCrew, presented a compelling case for using seaweed-based biostimulants to rejuvenate soil and improve agricultural resilience. Starting with a background in marine climate advisory for fishing communities, her startup transitioned into cultivating seaweed and extracting biostimulants rich in vitamins, micronutrients, phytohormones, and polysaccharides. She emphasized that their approach is rooted in climate

Innovation must be rooted in the soil because that's where everything starts.

– Debabrata Sarkar,
AlgaEnergy

”

Seaweed biostimulants are not just eco-friendly, they're profit-friendly too.

– Devleena
Bhattacharjee,
ClimaCrew

”

data and satellite-based weather advisory systems, which are localized for farmer adoption in vernacular languages. ClimaCrew currently works with FPOs and tailors its biostimulant solutions based on soil analysis of each target geography. According to her, the technology not only improves yield and soil microbial health but also reduces the reliance on chemical fertilizers, providing farmers with cost-effective and sustainable alternatives.

Synthetic Biology and Mating Disruption for Pest Control

Dr. Markandeya Gorantla, Executive Chairman & MD, ATGC Biotech, delved into the use of synthetic biology and semiochemicals to address pest management without conventional pesticides. Highlighting the environmental risks posed by rising pest populations due to climate change, he emphasized the urgent need for bio-intelligent pest control systems.

His company focuses on mating disruption through pheromone-based molecules. These pheromones alter insect behavior and prevent reproduction using as little as 5 grams of formulation dispersed via 400 source points over six months. These methods are already under regulatory processes across 50 countries. Notably, the technology operates without water and has been effectively deployed in global programs such as the USDA's Pink Bollworm Eradication initiative.

Dr. Gorantla also emphasized ATGC's achievement in developing synthetic biology platforms for pheromone biosynthesis, now using yeast and plant seed oils to produce pheromones at scale. With a target of reaching 100 million acres, he positioned this innovation as a potential rival to the conventional insecticide industry.

Nanobiotech and Smart Inputs for Soil to Crop Protection

Anup Ganguly, Founder & CEO, Farmology shared the evolution of Farmology from developing microbial consortia to deploying nanobiotech solutions. Initially focused on solving soil degradation through organic microbial inputs, the company has now developed a full spectrum of inputs that address soil health, crop nutrition, and protection.

He explained that their nanocarrier-based formulations integrate botanical extracts and homeopathic ingredients to improve efficacy across various crop stages. The technology is crop-specific and tailored to local climatic conditions.

Five grams. Six months. Zero water. That's the future of pest control.

– Dr. Markandeya Gorantla, ATGC Biotech

”

Every farmer wants results. Our job is to make sure they get them, sustainably.

– Anup Ganguly, Farmology

”

Additionally, Farmology has developed a digital app to ensure last-mile delivery and assist farmers in decision-making.

Mr. Ganguly stressed that true disruption comes from making technology affordable, easy to use, and results-oriented. He highlighted the importance of habitual resistance among farmers and called for collaborative efforts to promote large-scale behavioral change toward sustainable inputs.



Conclusion: Future-Proofing Agri Inputs through Deep Tech and Accessibility

The session concluded with a rapid-fire round where all panelists reflected on the three key pillars for innovation:

- Devleena Bhattacharjee emphasized user-friendly design, affordability, and traceable sustainability as critical to scale climate-smart innovations.
- Dr. Markandeya Gorantla highlighted India's push toward synthetic biology platforms, national biofoundries, and regulatory shifts as game-changers for agri-input disruption.
- Anup Ganguly noted the importance of field-tested, affordable products, technology suitability for crop zones, and farmer trust as cornerstones of innovation adoption.

Mr. Sarkar summarized the discussion by stating that while biologicals were once dismissed as “snake oil,” data-backed performance and regulatory legitimacy have made them the cornerstone of the new input economy. He underscored the need for inputs that are not just disruptive but also predictable, accessible, and climate-smart.



Panel 6

10. Panel Discussion 7

Disrupting the value chain of Makhana

Speakers:

Satyajit Singh, Founder, Shakti Sudha Makhana

Manan Mahajan, CEO, House of Makhana

Rahul Prakash, Founder & CEO, Amalfarm Solutions

Moderator:

Dr. Manoj Kumar, Senior Scientist, ICAR- NRC for Makhana



**Panel Discussion 7:
Disrupting the value chain of Makhana**

Dr. Manoj Kumar, Senior Scientist at ICAR–NRC for Makhana, opened the discussion with promising statistics on the rapid growth in makhana cultivation. In the last five years, the area under production has expanded from 13,000 hectares to approximately 40,000 hectares. Productivity has seen significant improvements, from 14–15 quintals per hectare to 22–25 quintals per hectare. Dr. Kumar highlighted the Government of Bihar's Makhana Development Scheme, under which ₹72,750 is provided per hectare to encourage makhana cultivation. This scheme, in collaboration with the Department of Horticulture, aims to incentivize production and improve rural livelihoods.



Dr. Manoj Kumar
Senior Scientist, ICAR– NRC for Makhana

Historical Context and Growth Trajectory

Mr. Satyajit Singh, Founder of Shakti Sudha Makhana, traced the evolution of makhana cultivation from its humble origins. When he began working in this field in 1999, production in Bihar was limited to 1800 tonnes and concentrated in just two districts—Darbhanga and Madhubani. Today, while makhana is cultivated in over 15 districts across 6 states, production has only reached around 30,000 tonnes, a figure Mr. Singh believes is far from adequate given rising demand. He compared this figure with India's annual imports of 4–5 lakh tonnes of cashew and 1.8 lakh tonnes of almonds to highlight the untapped potential of makhana. According to him, only 60% of current makhana production is of good quality, adding another layer of complexity to the supply gap.

Makhana isn't just a superfood—it's a super opportunity. We need to move from a volume business to a value business.

– Satyajit Singh,
Founder, Shakti Sudha
Makhana

”

Climate-Smart Alternatives and Production Challenges

Mr. Manan Mahajan, CEO of House of Makhana, emphasized the need to expand makhana cultivation to other states, as Bihar currently contributes nearly 80% of India's total production. He proposed replacing water-intensive paddy cultivation with makhana, especially in areas with surplus rice production. This shift would not only reduce greenhouse gas emissions but also support climate-smart agriculture. Mr. Mahajan highlighted climate volatility as a major challenge, citing examples of drying ponds in shallow areas due to high temperatures. He recommended leveraging makhana cultivation as a strategy for mitigating climate impact while improving farmers' income.

Policy Developments and Branding Strategies

Mr. Satyajit Singh also spoke at length about recent policy progress, notably the formation of the Makhana Board, which currently has a ₹100 crore allocation. He advocated for raising this allocation to ₹500 crores, with ₹25 crores earmarked for a national-level generic branding campaign. Drawing inspiration from successful initiatives like the 'Sunday ho ya Monday, roz khao ande' egg campaign and the 'Doodh Doodh Doodh' milk campaign, Mr. Singh called for a similar marketing push to elevate makhana's domestic and international profile. He also shared details of an upcoming innovation: collaboration with PVR Cinemas and Cinepolis to install makhana vending machines in multiplexes, offering it as a healthier snack alternative to popcorn.

Beyond Popped Makhana: Unlocking Diverse Applications

Dr. Manoj Kumar stressed that popped makhana, while popular, is the least nutritious and least profitable use of the crop. He proposed exploring high-value applications in the cosmetic and pharmaceutical industries. Makhana contains antioxidants and essential oils that could be extracted and commercialized. He urged stakeholders to develop value-added products beyond traditional uses to maximize economic returns.

Mechanisation and Technological Innovations

Mr. Manan Mahajan discussed the scope for full-scale mechanisation of the makhana production process. Currently, 99% of makhana is processed traditionally by the Mallah community. However, technological advancements are beginning to disrupt this norm.

Replacing paddy with makhana is a win-win: you increase farmer income and reduce greenhouse gas emissions.

- Manan Mahajan,
CEO, House of Makhana

”

Popped makhana is the least profitable use of the crop. Cosmetic, medicinal, and nutraceutical uses can unlock greater value.

- Dr. Manoj Kumar,
Senior Scientist, ICAR-
NRC for Makhana

”

Automatic roasting and popping machines have already been developed in collaboration with ICAR. Mr. Mahajan noted that their facility currently handles 30 kg/hour and is working toward scaling up to 100 kg/hour in the next few years. Mechanisation will improve consistency in quality, reduce contamination risks, and make production more uniform and scalable.

Waste Utilisation and Circular Economy

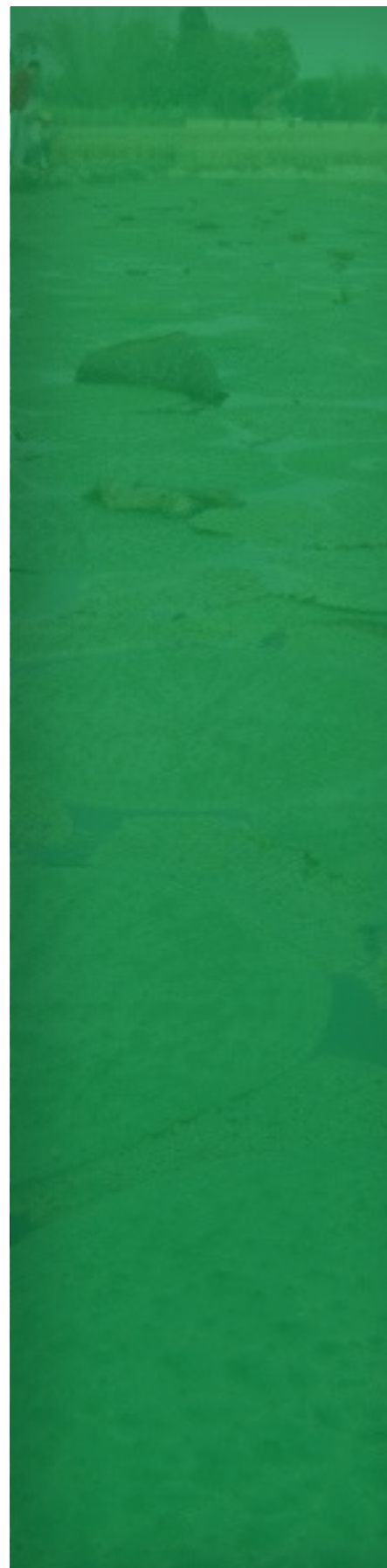
Mr. Rahul Prakash, Founder & CEO of Amalfarm Solutions, emphasized the importance of converting makhana production waste into value-added products. He stated that 40% of makhana is considered substandard or waste due to lack of grading infrastructure. However, with better training for FPOs and Self-Help Groups, and the adoption of automated grading systems using optical sensors, this waste could be transformed into functional or processed products, such as protein isolates or nutraceutical ingredients. He advocated for SOP-driven training modules and decentralised procurement to enable consistency and cost-efficiency across the value chain.

Infrastructure and Entrepreneurial Challenges

Mr. Rahul Prakash identified three key challenges facing aspiring makhana entrepreneurs: (1) price volatility, (2) inconsistent quality, and (3) logistics bottlenecks. He shared the experience of visiting a traditional processing unit in Darbhanga where manually popped makhana had perfect shape and taste but lacked uniformity. He argued for the use of optical sensors to standardize grading and help reduce processing costs. He also called for more incubation and support from institutions like the proposed Makhana Board to provide technical assistance, SOPs, and linkages to investors and exporters.

Investment Opportunities and Global Aspirations

Mr. Satyajit Singh concluded by saying that makhana has vast potential beyond food. It can be used for extracting antioxidants, essential oils, and even in cosmetic and medicinal formulations. He reiterated that while technology is essential, increasing production is paramount. He challenged entrepreneurs and policymakers to focus on product development unique to makhana rather than replicating existing formats like cookies or roasted snacks. The ultimate vision, he argued, should be to transition makhana from a volume-driven commodity to a high-value, innovation-driven sector.



Audience Interaction and Future Outlook

During the Q&A session, an entrepreneur asked how to enter the makhana sector and leverage international connections. Mr. Singh noted that success in the sector depends on addressing the three aforementioned hurdles and promised that by July 2025, a standardized startup model would be launched, including SOPs, sourcing guidelines, and investor linkages. He stressed the need for startups to create new, unique products rather than relying on repackaged ideas.

Dr. Kumar closed the session by reiterating that makhana has the potential to become a cornerstone of India's health food economy. However, success will depend on improved production, diversified applications, mechanisation, and a robust branding and policy ecosystem.



Panel 7

11. Panel Discussion 8

Creating More Investable Startups

Speakers:

Mousum Pal Choudhury, Director, Lok Capital
Emmanuel Murray, Investment Director, Caspian Impact
AB. Chakravarthy, Co-Chief Executive Officer, Upaya Social Ventures

Moderator:

Hari Rajagopal, Impact Finance Specialist, Rabo Foundation



**Panel Discussion 8:
Creating More Investable Startups**

Mobilizing Capital for Impact: Investment Criteria, Gaps, and Startup Readiness

The discussion was moderated by **Hari Rajagopal**, who set the tone for a dynamic and interactive session on financing the next generation of agri-startups. He began by framing the critical question: what constitutes 'investability' in the agri-startup space, and how do debt and equity investors determine the right moment and model to engage with a company?



Hari Rajagopal
Impact Finance Specialist, Rabo Foundation

Unlocking Scalable Impact: Lok Capital's Perspective

Mousum Pal Choudhury, Director, Lok Capital, opened by reflecting on Lok Capital's journey as one of India's earliest impact investors—launched at a time when the term "impact investment" had not yet entered mainstream vocabulary. The first fund focused heavily on financial inclusion, but as operations scaled, it became clear that agriculture and allied sectors were critical to deepening grassroots impact.

He outlined Lok's current mandate across financial services, agri-business, sustainable consumer goods, and broader climate-focused investments. As a growth-stage equity investor, Lok seeks out startups with scalable business models that demonstrate uniqueness and clear competitive moats.

A key takeaway was that profitability, while important, is not the primary filter; rather, startups must show strong unit economics and a plausible path to break-even within 15–18 months.

Governance, systems, and professionalism should begin before you reach ₹5 crore revenue, not after.

– Mousum Pal Choudhury, Lok Capital

”

Mr. Choudhury emphasized that investability also rests heavily on founder quality, execution capacity, and demonstrable impact on rural livelihoods and climate resilience.

Financing the 200–500 Crore Aspiration: Upaya’s Job-Centric Model

A. B. Chakravarthy, Co-CEO, Upaya Social Ventures, shared Upaya’s unique positioning as an India-focused, US-origin impact investor with a singular focus on dignified job creation for underserved communities. The firm specifically targets sectors such as agriculture, allied rural livelihoods, waste management, and sanitation, where informal labor can be transitioned into sustainable employment.

He stressed that Upaya is not looking for unicorns but rather for startups aspiring to build stable businesses in the ₹30–500 crore range. Unlike many VC firms, Upaya does not mandate the presence of high-end tech at inception. Instead, they prioritize businesses that demonstrate a core sustainable model and the potential to integrate tech and differentiation as they evolve.

Impact is central to Upaya’s investment thesis, and the firm actively verifies job creation data by directly contacting at least 10% of job recipients. Mr. Chakravarthy noted the lack of patient capital for “mid-scale” startups and explained Upaya’s blended finance approach—offering both equity and quasi-equity—to bridge this gap.

Scaling Without Cash Burn: Caspian’s Criteria for Equity and Debt

Emmanuel Murray, Investment Director, Caspian Impact, a veteran across equity and debt platforms, presented Caspian’s highly focused thesis: only upstream, scalable, and impact-driven agri-businesses are considered for investment. Emphasizing founder–market fit, he stated that Caspian prioritizes entrepreneurs with deep subject expertise and a long-term view.

He warned against startups overly dependent on grant funding and highlighted that Caspian prefers companies that are not excessively cash-hungry and can grow steadily even in the absence of quick follow-on rounds. Mr. Murray also shared insights from his role at Caspian Debt and Nabkisan Finance, where portfolio companies are vetted for their gross margins, client payment visibility, and revenue growth potential.

We don’t look for unicorns. We look for startups that can reach ₹200–500 crore sustainably and create dignified jobs.

– A. B. Chakravarthy,
Upaya Social Ventures



What we look for is scalable businesses that are not cash-hungry. We invest in companies that can grow steadily even if the next equity round doesn’t happen very soon.

– Emmanuel Murray,
Caspian Impact



As a member of several incubator credit committees, he reinforced the importance of diagnostics and intentionality among founders, encouraging them to clearly define their “why” before jumping into entrepreneurship.

Debt, Equity, and Grants: Choosing the Right Capital Stack

The panel addressed a frequently asked question: When should startups approach investors for debt, equity, convertibles, or grants?

- **Mr. Choudhury** emphasized that today’s funding landscape allows for tailored capital choices based on sector and growth stage. While seed funding from colleges and angel networks works for early-stage ideas, Lok Capital steps in post-revenue with equity to scale tested models.
- **Mr. Chakravarthy** outlined the importance of blended finance—especially for startups not chasing unicorn status. He highlighted that equity should not be raised too early, and grants can be useful if not over-relied upon. He also mentioned the rise of interest-subvention structures in blended finance as enablers for impact businesses.
- **Mr. Murray** provided a practical checklist for debt suitability: market certainty, sufficient gross margins to service interest, and clear payment cycles. He cautioned against debt for startups with opaque cash flows or those reliant on state payments. He added that startups that grow with debt often reach better valuations in subsequent equity rounds.

On Lead Investors, Incubators, and Government Engagement

The panel explored key ecosystem-building elements:

- On Lead Investors , Mr. Choudhury highlighted that Lok Capital often plays the lead role in sectors where it has deep expertise, such as financial services and agri. Lead investors signal diligence and pricing confidence, thus attracting co-investors.
- On Incubators , Mr. Chakravarthy noted the expansion of India's incubator ecosystem to over 1,000 entities. He called for greater specialization and thematic focus (e.g., waste, dairy, aquaculture) to provide depth and value-chain-specific support.



- On Government Engagement , Mr. Murray emphasized that programs like NABARD's fund of funds offer structured support, but alignment is often difficult due to conflicting incentives between public priorities and private capital mandates. He suggested more patient, outcome-based government capital aligned with national missions.

Startup Advice: What's Working, What Needs Work

- Mr. Choudhury praised the entrepreneurial energy of India's youth and the increasing ability to raise initial seed capital. However, he observed a lack of long-term vision and delayed attention to governance and systems.
- Mr. Chakravarthy warned against the "build-fast-exit-faster" mindset and urged founders to commit to the long haul. He emphasized the difference between executing a product idea and building a durable organization.
- Mr. Murray called for deeper reflection before launching startups. Founders must assess their own motivations and develop clarity on their goals. He cautioned against "me-too" apps and urged serious planning and diagnostics before execution.

Audience Q&A Highlights

1. On Navigating Government Schemes : A startup founder raised concerns about accessing government subsidies for fishing communities. Mr. Chakravarthy recommended engaging retired government experts as advisors, while Mr. Murray emphasized not over-relying on government schemes for business growth.
2. On Grant Dependence : All panelists agreed that while early-stage grants can help build MVPs, overdependence signals poor business fundamentals. Grants should supplement, not substitute, commercial revenue.
3. On Matching Founders with Incubators : Mr. Choudhury suggested that organizations like BCC&I create updated rosters to match founders and incubators. Mr. Chakravarthy stressed the need to make incubators themselves more sustainable.



12. Presentation

Honey Value Chain & Tech

Presenter:

Monika Shukla, Co-founder and CEO, Humble Bee



Monika Shukla
Co-founder and CEO, Humble Bee

The Crisis: Declining Bee Populations and Ecosystem Imbalance

Bees play an indispensable role in the pollination of almost all our fruits, vegetables, oilseeds, pulses, and spices, except crops like rice, maize, and sugarcane. However, their populations have been steadily declining over the past few decades due to multiple factors:

- **Climate Change:** Unpredictable flowering patterns disrupt bee migration. Bees often arrive after flowers have bloomed and withered, resulting in starvation and collapse of hives.
- **Pesticide Overuse:** Indiscriminate spraying during flowering and larval stages is a major cause of bee mortality.
- **Pollution:** Industrial pollution is damaging bee habitats and longevity.
- **Lack of Awareness:** While some crop cultivators (e.g., apple, strawberry, coffee) recognize the role of bees, others (e.g., chilli, cashew) still underestimate their importance. In some regions, myths persist that bees serve no useful purpose.

Until the consumer knows what real honey tastes like, the beekeeper will remain trapped—unrecognized, unpaid, and unvalued.

”

The Economic Reality: Beekeeping is Undervalued

Despite their ecological significance, India has very few full-time beekeepers. Bees are only active for around three months each year; the rest of the time, they need sugar water to survive. For most small farmers, this makes beekeeping economically unviable.

Key challenges include:

- **Limited profitability** without migratory beekeeping
- **High costs of hive construction and maintenance** (e.g., mango wood deteriorates quickly, unlike more durable pinewood used internationally)
- **Middlemen** controlling market access and pricing
- **Consumer unawareness** of what real, raw honey should taste and look like

A Scalable Model: Inspired by Amul, Powered by Women and Technology

To address these challenges, a new cluster-based model of beekeeping has been introduced, inspired by Amul's de-risked dairy model:

- **Cluster Composition:** Each cluster includes 25–30 women from 1–2 villages. Each woman is given 10 bee boxes, totaling around 250–300 hives, enough for one truckload.
- **Migratory Pollination Corridors:** Hives are transported overnight (to avoid bee stress) within 400–500 km, following flowering cycles (e.g., mustard in Jan–Feb).
- **Climate Resilience:** This model also enhances cross-pollination, improving crop diversity, yield, and hardiness. Even in typically self-pollinating crops like sesame, bee presence improves uniformity and productivity.

Bee Doctors, Tech Platforms, and Community Ownership

- Each cluster is supported by a Bee Mitra—a trained "bee doctor" who identifies and treats hive issues. One Bee Mitra is trained for every 25 beekeepers.
- A technology platform with voice, image, and language recognition (usable on shared family phones) delivers technical support, even in tribal and remote regions.
- Youth and women are key to this transformation—women, in particular, have shown greater sensitivity to insect behavior and play a pivotal role in hive management.

Women learn insect behavior better than men. Our campaign is proudly women-led.

”

The Numbers: A Hidden Livelihood Powerhouse

- Each bee box yields ~15 kg of honey per harvest
- With 10 boxes and 6 seasonal migrations: 750–900 kg of honey per woman annually
- In April 2024, farmers sold honey at ₹80–90/kg
- The Government of India benchmark price is ₹195/kg
- New Zealand exports honey at ₹3,500/kg

India is the 7th largest exporter of honey, with the potential to offer 40–45 floral varieties like tulsi, ajwain, acacia, moringa, and curry leaf —all naturally monofloral due to bees' floral loyalty.

From Awareness to Action: Building a Conscious Honey Economy

- Real honey **is RU8P-free and crystallizes naturally**. Avoid brands selling high-fructose syrup falsely labeled as honey (India imported **12,000 MT** of such syrup in 2023).
- Always choose raw, unprocessed honey as processing destroys natural enzymes and nutrients.
- Protect queen bees and colonies by preventing pesticide spraying during flowering and larval stages.

Recommendations and Way Forward

Call to Action:

- Form **pollination nuclei** in communities with floral diversity
- Promote **women-led beekeeping clusters**
- Encourage **migratory beekeeping corridors**
- Integrate **climate resilience and ecological restoration** into agri-value chains
- Build **consumer awareness campaigns** on the value of raw, monofloral honey

Regions Active: Uttar Pradesh, Bihar, Jharkhand, Odisha, Andhra Pradesh, and the Sundarbans.

Goals: Deeper penetration, stronger local capacity, and integrated export frameworks.



Conclusion: A Call to Conscious Collaboration

Bees are not just pollinators—they are the silent architects of food security, biodiversity, and climate resilience. Yet their survival is imperiled by our negligence and ignorance. Through a holistic, technology-enabled, women-centric, and ecologically sensitive model of migratory beekeeping, there lies a real opportunity to revolutionize rural livelihoods, enhance agricultural yields, and secure India's place in the global honey export market.

The call to action is clear: if your community has floral diversity or pollination potential, initiate a beekeeping nucleus. With the right support systems, India can build a resilient, inclusive, and scalable pollination corridor— one hive at a time.



Monika Shukla
Co-founder and CEO, Humble Bee

13. Panel Discussion 9

Reimagining the incubation landscape in East India

Speakers:

Manu Prem Nair, CEO, Agri Business Incubation Foundation, IIT Kharagpur

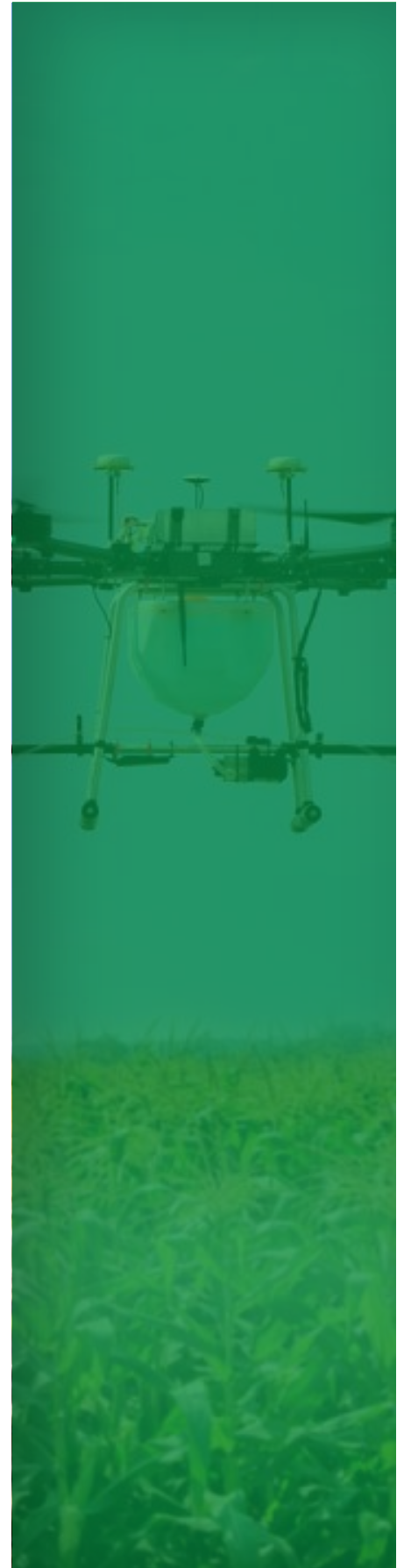
Dr. Danish Tamuly, Director, North East Agriculture Technology Entrepreneurs Hub (NEATeHub)

Moderator:

Gaurav Kapoor, Chief Business Officer, IIM Calcutta Innovation Park



**Panel Discussion 9:
Reimagining the incubation landscape in East India**



The final panel of the Look East AgTech Summit 2025 brought into focus a crucial but often overlooked pillar of agricultural transformation that is the role of incubators in building resilient innovation ecosystems. Moderated by **Gaurav Kapoor, Chief Business Officer, IIM Calcutta Innovation Park**, he opened the session by highlighting why the conversation on incubation was both timely and necessary. Incubation, he noted, is not merely about funding startups, but about shaping ecosystems that are contextually grounded, especially in East and Northeast India, regions rich in biodiversity, traditional knowledge, and agro-climatic diversity. However, they remain underrepresented in India's mainstream startup ecosystem. The discussion emphasized that agri-tech and food-tech startups require unique forms of support, including patient capital, rural market access, and deep community trust.

He also acknowledged that while the ecosystem in the East is still in its build-and-learn phase, initiatives like ABI at IIT Kharagpur and NEATeHub at Assam Agricultural University are emerging as anchor incubators, strengthening local capacity, building research-to-market pipelines, and supporting grassroots innovations.



Gaurav Kapoor
Chief Business Officer, IIM Calcutta Innovation Park

Building a Research-Driven Incubation Framework

Mr. Manu Prem Nair explained how the Agri Business Incubation Foundation at IIT Kharagpur is leveraging the institute's robust research infrastructure to build a scalable and tech-oriented startup ecosystem. He emphasized the advantage of having access to multidisciplinary departments, including agriculture, food engineering, management, and legal,

We're shifting from low-volume grants to high-volume equity and debt models—because grants alone don't build resilience.

– Manu Prem Nair, CEO, Agri Business Incubation Foundation, IIT Kharagpur

”

which allows for integrated support on IP facilitation, technology validation, and go-to-market strategies.

Citing examples like Maribell Solar Pvt. Ltd. and Reward Aero Systems, Mr. Nair showcased how startups working on hydrogen fuel cell-powered drones and high-efficiency aquaculture transport systems have successfully been incubated and converged with various departments within IIT Kharagpur.

Contextualizing Incubation in the Northeast

Dr. Danish Tamuly brought attention to the distinct cultural and economic dynamics of the Northeast. As Director of NEATeHub under Assam Agricultural University, the only state university in the ICR system with an Atal Incubation Centre (AIC), he emphasized the importance of contextual incubation models for the region's 200+ tribal communities.

He spoke of the importance of local innovation capacity building, citing how traditional products like muga silk and rice beer are being commercialized through technological intervention. In particular, he highlighted a breakthrough technology developed to terminate fermentation in rice beer, enabling safe packaging and commercialization of a highly perishable tribal product.

Dr. Tamuly emphasized that western-style incubation models often do not translate well in the Northeast, and instead, a decentralized, cluster-based incubation approach embedded within cultural ecosystems is more effective.

From Research to Market: Bridging the Gap

Both speakers agreed that incubators must play an active role in commercializing research. Mr. Nair noted that while student-led IP generation is high, many ideas are left behind when students graduate. IIT Kharagpur is now working on a model to license student-generated IP to external entrepreneurs or market-driven startups to ensure continuity.

Dr. Tamuly discussed NEATeHub's Technology Readiness Level (TRL) assessments, which ensure that technologies are demand-driven and not merely technology-push. He cited the successful commercialization of Assam lemon juice using ultrasonication to neutralize bitterness and extend shelf life: technology that has now been transferred to multiple startups.

Imagine if every Tier 2 or Tier 3 college reimaged their startup club as a legal incubator. You'd have a groundswell of grassroots innovation.

– Manu Prem Nair, CEO, Agri Business Incubation Foundation, IIT Kharagpur

”

Incubation Models for the Future

Both speakers spoke about moving beyond grant-based models to hybrid models involving equity and debt. Mr. Nair shared how ABI Foundation is exploring 1% budgetary allocation from IIT Kharagpur's internal resources for entrepreneurship promotion and is also working to bring in high-net-worth alumni as impact investors.

Dr. Tamuly highlighted NEATeHub's success in mobilizing CSR funds from ONGC, Oil India, and NRL, and pointed out that incubators must become value proposition-driven, not merely conduits for grants. NEATeHub is now developing a startup policy for all state agricultural universities in Northeast India under a mandate from the Ministry.

Lessons in Inclusive Incubation

The session emphasized the importance of engaging rural and tribal youth and catching them young. NEATeHub is conducting psychometric assessments for students in their second year and offering entrepreneurship training as part of a parallel academic curriculum. Students are also being placed in live startup environments instead of traditional internships.

Meanwhile, ABI Foundation is working closely with local industries and civil society actors to build local capabilities and ensure that incubation efforts feed directly into climate resilience, food security, and rural livelihoods.

The Way Forward

The panel concluded by stating that regional incubators must adopt a value proposition-driven approach. Whether it is in sustainability, rural livelihoods, or climate action, incubators must be differentiated by their strength areas and become integrated into the broader policy and investment ecosystem.

In the words of Dr. Tamuly, "We must stop thinking of ourselves as just startup funders. Our job is to ask: what is the value we are bringing to the ecosystem?"

The session ended with a rapid-fire round and audience Q&A, reinforcing the need for context-aware innovation models, decentralized capacity building, and reimaged funding architectures to shape the incubation landscape of East India.

Governance, systems, and professionalism should begin before you reach ₹5 crore revenue, not after.

– Mousum Pal
Choudhury, Lok Capital

”

14. Exhibition Stalls

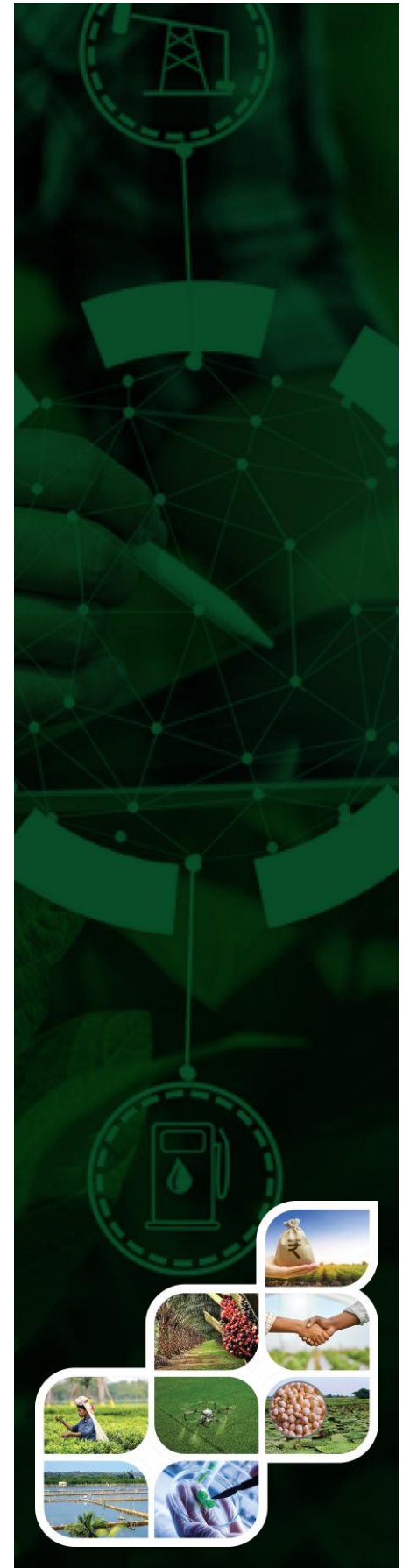
The Exhibition Zone at the Look East AgTech Summit 2025 served as a dynamic platform for innovators, manufacturers, and technology-driven enterprises to demonstrate next-generation solutions for agriculture and allied sectors. The 19 stalls which set up camp at the Exhibition Zone brought together diverse stakeholders, ranging from grassroots tool manufacturers to drone and IoT pioneers, offering practical, scalable, and sustainable interventions for farmers, agri-enterprises, and rural communities.

Sun Agro Tech

Sun Agro Tech is a distinguished Original Equipment Manufacturer (OEM) specializing in agricultural hand tools. Based in Dankuni, Hooghly, the company boasts over 50 years of experience in crafting high-quality implements such as hoes (powrahs) and shovels (belchas). With ISO 9001:2015 and ISI 1759:1986 certifications, Sun Agro Tech has established a strong presence in the Eastern Region of India and has expanded its reach to international markets including Bangladesh, Nepal, Sri Lanka, and Myanmar.

Products Demonstrated:

1. Agri Powrah (1.8/1.6/1.4 kg): Versatile hoes designed for general agricultural tasks, offering durability and efficiency.
2. West India Powrah (1.6 kg): Tailored for the soil conditions prevalent in Western India, ensuring optimal performance.
3. Bombay Powrah (1.4 kg/1.2 kg): Compact and lightweight hoes suitable for precision tasks in varied terrains.
4. Agri Powrah (1 kg): Lightweight hoe ideal for small-scale farming and gardening activities.
5. East India Powrah (1.8 kg): Specifically crafted for the heavy and clay-rich soils of Eastern India, featuring a higher rib structure for enhanced load distribution and a tilted design for effortless soil penetration.
6. Swan Neck Shovel (1 kg/1.4 kg): Ergonomically designed shovels with a curved neck, facilitating efficient digging and soil turnover while minimizing user fatigue.



Benefit to Stakeholders:

Sun Agro Tech's products are engineered to enhance productivity and reduce physical strain for users across various sectors

- **Farmers and Agricultural Workers:** The ergonomic design and durability of the tools aid in efficient land preparation, planting, and maintenance, leading to increased agricultural output.
- **Construction and Infrastructure Professionals:** Robust tools suitable for excavation, debris removal, and groundwork, ensuring reliability in demanding environments.
- **Export Markets:** By adhering to international quality standards, Sun Agro Tech caters to the specific needs of diverse agricultural practices in neighboring countries, fostering regional agricultural development.

Revoltaero Systems

Revoltaero Systems Pvt. Ltd. is a deep-tech startup incubated at the Agri Business Incubation Foundation (ABIF), IIT Kharagpur. The company specializes in the design, development, and composite manufacturing of high-performance Unmanned Aerial Vehicles (UAVs). Their expertise lies in creating lightweight, modular drone systems for applications in surveillance, precision agriculture, mapping, and disaster management.

Technologies Demonstrated

At LEATS 2025, Revoltaero Systems showcased their AI-integrated drone platforms equipped with thermal and multispectral imaging capabilities. These drones are designed for:

- **Precision Farming:** Monitoring crop health, managing irrigation, and detecting early signs of pests or diseases.
- **Land-Use Mapping:** Providing detailed aerial imagery for efficient land management and planning.
- **Disaster Management:** Assisting in surveillance and assessment during natural calamities.

The drones feature lightweight composite airframes, enhancing flight efficiency and endurance, making them suitable for operations in rural and remote areas.



Revoltaero Systems offers significant benefits to various stakeholders:

- Farmer Producer Organizations (FPOs): Access to data-driven insights for improved crop yields and resource management.
- Government Agencies (e.g., NABARD, Agriculture Departments): Tools for large-scale agricultural monitoring and planning
- Agri-Tech Companies: Integration of advanced UAV technology into existing agricultural solutions.
- Rural Cooperatives and Development Organizations: Empowering rural communities through training and deployment of drone technology.

Mobitech Wireless Solution

Mobitech Wireless Solution Pvt. Ltd., headquartered in Perundurai, Erode District, Tamil Nadu, is a pioneering company in the field of IoT-based irrigation and fertigation automation systems. Established in 2008, Mobitech has been at the forefront of integrating advanced technologies like LoRa communication and AI to optimize water usage, enhance crop yields, and promote sustainable farming practices across India.

Technologies Demonstrated:

At the Look East AgTech Summit 2025, Mobitech showcased its cutting-edge smart irrigation automation solutions, including:

- Dcon Ag Series Smart Irrigation Controllers: These AI-powered controllers enable precise irrigation scheduling based on real-time data from soil moisture sensors and weather forecasts, ensuring optimal water usage.
- Wireless Valve Actuators: Utilizing LoRa technology, these actuators allow for remote control of irrigation valves, facilitating efficient water distribution across large agricultural fields.
- Sensor-Integrated Automation Panels: These panels integrate various sensors to monitor environmental parameters, providing farmers with actionable insights for informed decision-making.
- Mobile Applications for Real-Time Monitoring: User-friendly apps that enable farmers to monitor and control their irrigation systems remotely, enhancing convenience and operational efficiency.



Benefits to Stakeholders:

Mobitech's innovative solutions offer significant advantages to a broad spectrum of stakeholders:

- Farmers and Farmer Producer Organizations (FPOs): Enhanced crop yields through precise irrigation, reduced labor costs, and improved resource management.
- Government Agencies and NGOs: Alignment with initiatives like "Per Drop More Crop," promoting water conservation and sustainable agriculture practices.
- Agri-Tech Companies: Opportunities for integration of advanced irrigation technologies into broader agricultural solutions.
- Rural Communities: Empowerment through access to affordable and scalable automation technologies, fostering rural development and resilience.

Krishi Vikas Udyog

Krishi Vikas Udyog, a brand under Abybaby E-Com Pvt. Ltd., is one of India's fastest-growing digital agri-marketplaces. Headquartered in Kolkata, the platform connects farmers, equipment dealers, input suppliers, and service providers through its mobile app and website. Users can buy, sell, or rent new and used agricultural machinery, as well as purchase seeds, fertilizers, and pesticides. The platform also offers access to government scheme information, farming guides, and smart agriculture tools.

Technologies Demonstrated:

At the Look East AgTech Summit 2025, Krishi Vikas Udyog showcased its comprehensive digital agri-marketplace platform, highlighting:

- Subscription-Based Dealer Promotion: A model allowing agri-dealers to promote products and receive verified leads.
- Equipment Renting Module: A user-friendly feature enabling small and marginal farmers to rent equipment affordably.
- Offline-to-Online Onboarding Support: Assistance for rural entrepreneurs and dealers to transition to digital platforms.
- Mobile Application Features: Including online agriculture shopping, tractor rent services, second-hand tractor marketplace, farming guides, and information on government schemes.



Benefits to Stakeholders:

- **Farmers:** Access to affordable equipment and inputs, cost savings through renting options, and transparent pricing from verified sellers.
- **Agricultural Equipment Dealers:** Expanded customer reach via digital presence, verified lead generation, and promotional opportunities.
- **Service Providers:** New market access through the Krishi Vikas network and partnership opportunities for value-added services.
- **Government & NGOs:** A scalable platform for delivering schemes, advisory services, and outreach programs digitally.

Buzzworthy Ventures (Humble Bee)

BuzzWorthy Ventures Pvt. Ltd., operating under the initiative Humble Bee, is a social enterprise recognized under the Government of India's Startup India programme. Founded by alumni of IIT Kharagpur, TISS Mumbai, and Ashoka University, the organization brings over 35 years of collective experience in social impact, technology, and agri-value chains. BuzzWorthy aims to revolutionize beekeeping in India through a unique "tech-and-touch" model combining digital innovation via the BEEKind mobile platform with community-led extension services through BEEMitra. Their vision is to empower 10 million smallholder, tribal, and women beekeepers by 2030, enhancing climate resilience, ecological sustainability, and rural prosperity.

Technologies and Products Demonstrated:

At the Look East AgTech Summit 2025, BuzzWorthy showcased the following innovations:

- **Precision-Engineered Beehives:** High-quality, edible oil-treated pinewood beehives designed to improve hive yield and overall colony health.
- **Scientific Beekeeping Tools:** A suite of tools facilitating ethical and sustainable beekeeping practices, including equipment for harvesting diverse hive products like pollen, beeswax, propolis, royal jelly, and bee venom.
- **BEEKind Mobile Application:** An AI-powered platform offering real-time, personalized guidance to beekeepers. Features include image recognition for hive condition analysis, a vernacular speech bot for real-time troubleshooting, predictive models for floral blooming patterns, and a marketplace for hive products.



Benefits to Stakeholders

- Small and Marginal Farmers, Tribal Communities (especially Women): Generation of sustainable, climate-resilient livelihoods through scientific beekeeping; upskilling and income diversification opportunities.
- Government & State Rural Livelihood Missions (SRLMs), Forest and Rural Development Departments: A scalable, replicable model for rural enterprise development, climate adaptation, women's economic empowerment, and agri-livelihood diversification.
- Institutional Partners (Industry, Academia, Research Bodies, Multilateral Agencies): Strategic collaborations for research, skill-building, and community-level outreach, aligned with Sustainable Development Goals (SDGs).
- Buyers and Exporters (HoReCa, Corporate Gifting, Export Houses): Access to high-quality, traceable, ethically harvested monofloral and polyfloral honey sourced from diverse Indian geographies.

Aqua Doctor Solutions

Aqua Doctor Solutions, founded by Dr. Debtanu Barman, is a pioneering enterprise in the aquaculture sector focused on sustainable fisheries-based livelihoods. Headquartered in Kolkata, the company has emerged as a holistic service provider in aquaculture—offering fish/shrimp farm registration, lab testing, seed and feed supply, aqua healthcare, value-added product support, and expert consultancy. With over 10 years of experience in the field, Aqua Doctor has worked with over 30,000 farmers and conducted more than 2,000 training programs across India. The company is also expanding internationally to countries like Bangladesh and Nepal.

Technologies and Products Demonstrated:

- Aqua Health Care Products – Medications and treatments to manage fish health and aquatic diseases.
- Water Testing Kits – Field-use kits for measuring water quality parameters critical to fish survival and productivity.
- Hi-tech Aquaculture Equipment – Including oxygen concentrators, auto-feeders, and aeration devices to enhance farm efficiency.
- Fish Seeds and Aqua Feeds – High-quality input support for both freshwater and brackish water aquaculture systems.
- Online and Offline Training Services – Scientific and technical guidance for farmers and aquapreneurs via www.efishtutor.com.



- Value-Added Services – Guidance on product diversification and market linkages for fish-based products.

Benefit to Stakeholders:

- For Small & Marginal Farmers and Women Aquapreneurs: Skill-building, access to better seed/feed/medicines, and enhanced income through improved aquaculture practices.
- For Government Departments and SRLMs: Scalable model for promoting aquaculture-based livelihoods under skilling and entrepreneurship missions.
- For NGOs and Development Agencies: Collaboration for field-based extension, training programs, and sustainable resource use.
- For Institutions and Researchers: Partnership opportunities in lab diagnostics, technology trials, and curriculum-aligned internships.
- For Buyers and Exporters: Reliable access to healthy, traceable fish stock and value-added fish products.

Maribus Solar

Maribus Solar Pvt. Ltd. is an innovation-driven startup addressing real-world challenges in aquaculture through advanced sensor and material technologies. With in-house expertise in Fibre-Reinforced Polymer (FRP) fabrication and embedded electronics, the company offers a comprehensive suite of solutions ranging from fish transport systems to real-time water quality monitoring. Maribus Solar is incubated at ABIF, IIT Kharagpur and is rapidly emerging as a pioneer in grassroots aquaculture technologies.

Technologies Demonstrated:

- GVIT (Live Fish Transportation Tank): A high-strength FRP tank insulated with sandwich panels for improved durability and thermal efficiency, ensuring safer live fish transport and reduced mortality rates.
- MariSense Sensor Suite: A robust, affordable sensor platform designed for continuous monitoring of key water quality parameters—ammonia, pH, and temperature—with upcoming integrations for dissolved oxygen and salinity.
- AI-Enabled IoT Dashboard: A proprietary cloud platform that collects, processes, and visualizes sensor data in real-time, enabling remote monitoring, automated alerts, and AI-powered analytics for proactive decision-making in aquaculture.



Benefit to Stakeholders:

- Fish Farmers & Hatcheries: Improved fish health and survival through real-time water quality insights and safer transport solutions, reducing losses and boosting productivity.
- Logistics & Distributors: Enhanced efficiency and reduced mortality in live fish transport, ensuring better quality seafood reaches markets.
- Regulators & Policymakers: Access to accurate, field-level environmental data for enforcing sustainability and water quality compliance in aquaculture practices.
- Consumers: Improved access to safer, fresher, and ethically transported seafood.
- Research & Agri-Tech Ecosystem: Opportunities for integration, pilot deployments, and joint R&D in precision aquaculture and sensor networks.

RISE Foundation IISER

RISE Foundation, the Technology Business Incubator hosted by the Indian Institute of Science Education and Research (IISER) Kolkata and supported by the DST-NIDHI program, plays a critical role in fostering deep-tech, impact-driven startups. The foundation bridges cutting-edge academic research with entrepreneurial ventures across sustainable agriculture, smart materials, AI/ML-based applications, healthcare, and environmental science. Through mentoring, funding facilitation, legal/IP support, and infrastructure, RISE Foundation has empowered first-generation innovators and social entrepreneurs to scale their ideas into sustainable businesses.

Startups Demonstrated:

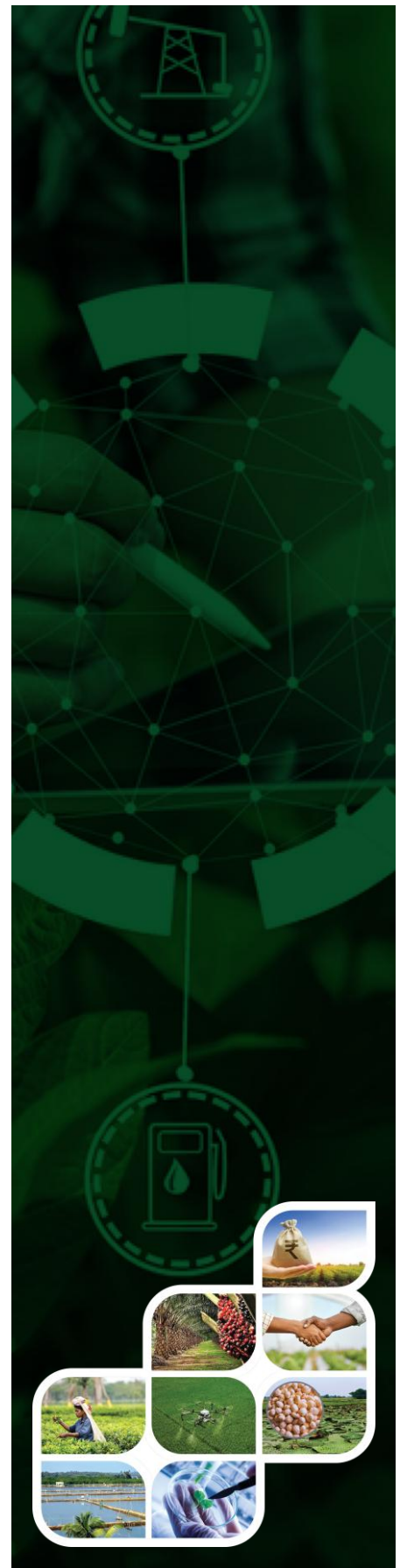
At LEATS 2025, RISE Foundation showcased innovations from four of its incubated startups that exemplify market-ready solutions in agri and allied sectors:

1. BomLife Pvt. Ltd.

Innovation: A proprietary technology platform for organic agricultural enhancement, focusing on productivity and ecological regeneration through a triple-bottom-line approach.

Key Products: BOM Life Hitech Organic soil revitalizers and bio-nutrient solutions.

Recognition: Winner of the Agri Grant Challenge, recipient of HDFC Parivartan funding.



2. Sattvika Agri Lab Pvt. Ltd.

Innovation: Natural poultry feed additives that strengthen gut health and immunity, aiming to reduce antibiotic use in livestock.

Impact: Promotes safer poultry products and healthier livestock management practices.

Recognition: Secured HDFC Parivartan Startup Funding.

3. PritMit Biotech Pvt. Ltd.

Innovation: Chemical-free nutraceuticals and detox solutions rooted in biotechnology and sustainable food systems.

Application: Enhances food safety and long-term wellness via plant-based interventions.

4. Riish Exports Pvt. Ltd.

Innovation: Preventive wellness solutions leveraging Indian herbal wisdom and natural formulations.

Focus: Community-scale health improvement, sustainable lifestyle transformation, and plant-based accessibility.

Benefit to Stakeholders:

- Farmers & FPOs: Access to affordable, safe, and sustainable productivity enhancers and feed alternatives.
- Healthcare & Wellness Industry: Adoption of plant-based, eco-friendly nutraceuticals.
- Rural Entrepreneurs & SHGs: Opportunities to engage in the distribution and production of bio-based agricultural and wellness products.
- Policy Makers & Government Bodies: Scalable models for natural farming, rural health, and community wellness aligned with sustainable development goals.
- Investors & Ecosystem Enablers: High-impact, research-backed ventures offering strong return potential and measurable societal outcomes.

Kheetii Bazaar

Kheetii Bazaar is a forward-looking agri-tech startup dedicated to eliminating inefficiencies in India's agricultural supply chain. By leveraging cutting-edge digital technologies, the company seeks to eliminate middlemen and bring transparency, traceability, and fairness to the agri-commodity trade ecosystem. Their farmer-first digital marketplace connects fruit and vegetable producers directly with B2B buyers across India and abroad, ensuring better prices for farmers and reduced costs for bulk buyers.



Technologies Demonstrated

At the Look East AgTech Summit 2025, Kheetii Bazaar demonstrated its integrated Web2-Web3 platform, combining conventional digital interfaces with advanced blockchain-backed infrastructure. Key technologies on display included:

- **Blockchain for Transparency** : Used to build trust and traceability across supply chain transactions.
- **AI for Demand Analysis & Forecasting** : Enables data-driven procurement and inventory planning for both farmers and buyers.
- **IoT for Quality Monitoring** : Ensures freshness, quality assurance, and compliance with food safety standards.

Benefit to Stakeholders

- **For Farmers** : Direct market access with elimination of intermediaries; improved income through better price realization; transparent transactions.
- **For B2B Buyers (Retail Chains, Exporters, Wholesalers)** : Lower procurement costs, quality-certified produce, and verified supply sources.
- **For Policymakers and Development Agencies** : A scalable, tech-enabled solution promoting rural income growth, digital literacy, and agri-export enhancement.
- **For Technology & Logistics Partners** : Opportunities to integrate services and scale with a blockchain-driven agri-commerce model.

Bharat Fishmate

Bharat Fishmate Pvt. Ltd., based in Barrackpore, Kolkata, is an emerging fisheries enterprise working to address systemic gaps in India's freshwater fish farming value chain. Founded by Surajit Kashyapi and Payel Kashyapi, the startup is incubated at ABIF and AFBIC of IIT Kharagpur and Pusa Krishi. With a presence across 24 states and a network of 15,000+ fish farmers, Bharat Fishmate offers a one-stop platform for high-quality fish seed, input supply, market linkage, and farmer training.



Technologies and Solutions Demonstrated:

At the Look East AgTech Summit 2025, Bharat Fishmate showcased its integrated fisheries platform encompassing:

- **Quality Fish Seed Production:** Disease-free, high-yielding fingerlings tailored for freshwater aquaculture.
- **Efficient Input Supply Chain:** Streamlined delivery of essential feed, nutrients, and health supplements.
- **Digital Market Linkage:** Technology-enabled access to downstream markets for ready fish, improving farmer realization.
- **Farmer Training Programs:** Hands-on and digital training for fish farmers across India, focused on scientific and sustainable aquaculture practices.

Benefit to Stakeholders:

- **Fish Farmers:** Access to high-quality seed, essential inputs, market linkage, and capacity building.
- **Government & Development Agencies:** Scalable model for rural employment, nutritional security, and climate-resilient livelihoods.
- **Investors & Agri-tech Partners:** Proven traction, with an ARR of ₹51 lakhs and presence in 24 states, offering opportunities for co-development and scale-up.
- **Research and Academic Institutions:** Collaboration on sustainable aquaculture technologies and capacity-building interventions.

Ramnagar Seed Farm

Founded in 1994 in Ramnagar, near Burdwan in West Bengal, Ramnagar Seed Farm Pvt Ltd (RSFPL) has grown from a grassroots initiative into one of India's fastest-growing seed companies. The company began as "Ramnagar Gramin Seed Farm" under the inspiration of Dr. D. Konar (former Director of Agriculture, West Bengal) and was later formalized as a private limited company in 2011. The company operates under the flagship brand "Sonali Phasal", recognized widely for quality and performance.



Technologies and Products Exhibited:

At the Look East AgTech Summit 2025, RSFPL showcased its extensive and scientifically developed seed portfolio, including:

- Field Crops: Hybrid and improved varieties of paddy, maize, bajra (including drought-tolerant “Elephanta”), wheat, jute, lentil, and SSG (Sorghum Sudan Grass).
- Vegetable Crops : Hybrid varieties of tomato, chilli, okra (bhindi), watermelon, brinjal, onion, radish, spinach, amaranthus, and green peas.
- Oil Seeds: Mustard and sesame.
- The firm’s flagship hybrid bajra “RSF 1133” and drought-tolerant multicut variant “Elephanta” were among the key innovations displayed.

Benefit to Stakeholders:

RSFPL engages a wide range of stakeholders across the agricultural ecosystem:

- Farmers: Across India, who benefit from reliable, high-yielding, and stress-tolerant seed varieties.
- Distributors and Dealers: A robust network of over 500 channel partners supports nationwide access and market penetration.
- Government and Research Institutions: With whom RSFPL partners for agronomic development and certification (ISO, DSIR).
- Corporate Buyers and Export Clients: Through its growing focus on international business and advanced logistics.

Safe Agri

Founded in 2013 and headquartered in Kolkata, Safe Agritrade Pvt Ltd is a premier global agro-commodity processing and export enterprise, driven by a vision to provide Safe and Honest solutions to discerning international customers. An affiliate of the ISO-certified SDPL Group—with over four decades of expertise in fast-moving consumer goods—Safe Agritrade has rapidly emerged as a trusted name in global agricultural trade. Under the leadership of Mr. Ritum Jain, the company has carved a niche in offering customized procurement, processing, and repackaging solutions for a wide range of agro commodities, with particular strength in rice, tamarind, and pulses.



Benefit to Stakeholders :

Safe Agritrade serves a broad stakeholder base:

- International Importers and Distributors seeking premium-grade agro-commodities.
- Retailers and Wholesalers who require consistent quality and tailored packaging.
- Farmers and Aggregators who are integral to the backend procurement and supply ecosystem.
- Port and Logistics Partners who benefit from efficient cargo movement and export volumes.

Safe Agritrade's integrated supply chain, backed by strong farmer and aggregator networks, ensures strict quality control and food safety standards. Their proximity to Kolkata Port allows for faster shipments and competitive ocean freight rates, a major logistical advantage in global trade.



15. Conclusion

The Look East AgTech Summit 2025 brought together a vibrant and diverse assembly of stakeholders: farmer producer organizations, agritech startups, government departments, academic institutions, corporates, CSR foundations, and grassroots innovators, who collectively reinforced the urgent need to reimagine agriculture in Eastern and Northeastern India. Through nine rich panel discussions and a series of focused presentations and demonstrations, the Summit underlined the immense untapped potential of the region and offered a clear roadmap for inclusive, technology-led, and sustainable agricultural transformation.

A few clear themes emerged across the sessions. First, the region's agri-economy must be made more resilient through diversification- of crops, of technology and of livelihoods. Makhana, seaweed, tea, bamboo, and fishery-based value chains are examples of sectors poised for growth if backed by better infrastructure, mechanisation, and policy support. Second, the role of grassroots innovation and regional incubators is critical. The ecosystem must move beyond funding individual startups to building distributed, place-based capacity—empowering women, tribal communities, and rural youth to be agri-entrepreneurs, not just beneficiaries.

Third, the discussions repeatedly emphasized the need for bold investments in clean energy and climate-smart agriculture- solar irrigation, biofertilisers, bee-based pollination, carbon farming, and AI-driven drone services, to not only boost productivity but also reduce environmental degradation. Importantly, panelists called for rethinking traditional subsidy models and instead channeling funds towards enabling infrastructure (like cold chains, drone hubs, and incubation labs), improved market access, and digital inclusion.

For NABARD, the Summit reaffirmed its pivotal role as a systems builder: one that can shape the enabling conditions for long-term transformation. Whether through the scaling of carbon credit platforms for FPOs, the establishment of pollination corridors, or the formalization of inland fisheries insurance, NABARD's convening power, funding capacity, and institutional expertise can catalyze high-impact interventions. Going forward, an integrated strategy, combining grassroots incubation, technology co-creation, and decentralized value chain development will be essential to realizing the promise of the East.



The Look East AgTech Summit 2025 is not just a conclusion, but a beginning—a collective call to action to co-create a resilient, equitable, and future-ready agricultural economy for the region.

16. Recommendations

The Look East AgTech Summit 2025 was a catalytic moment for reimagining agriculture and allied sectors in Eastern and Northeastern India. Through its nine high-impact panel discussions, keynote sessions, curated presentations, and innovation showcases, the summit brought together a broad coalition of actors: from farmers and agri-entrepreneurs to incubators, financiers, policymakers, and researchers. Together, they charted a blueprint for inclusive, sustainable, and innovation-led agricultural transformation in the region.

The following key recommendations emerge from the summit and are presented for serious consideration and action:

1. Decentralise incubation capacity to regional institutions and connect startups with FPOs and rural enterprises:

- Encourage more agri-business incubators to be set up within agricultural universities, engineering colleges, and polytechnics across Tier 2 and Tier 3 cities modelled after successful incubators such as NEATeHub (Assam Agricultural University) and RISE Foundation (IISER Kolkata).
- Incubators should not only support urban startups but also help rural youth, FPOs (Farmer Producer Organizations), SHGs (Self Help Groups), and cooperatives to develop local solutions.
- Create collaborative models where incubators offer business mentorship, market access, and prototype development support tailored to rural challenges.

2. Mainstream access to capital beyond grant funding

- Facilitate a blended financing model that includes not just government grants but also patient capital (long-term investments that allow startups time to grow), soft loans (low-interest loans), and equity investments.
- Enable incubators to blend small-ticket grants (₹5–10 lakhs) with convertible debt or equity instruments, in partnership with social venture funds like HDFC Parivartan or NABVENTURES



- Work with banks, cooperatives, fintech companies, and agritech lenders to improve access to working capital for agri startups, especially in underserved geographies.
- Promote digital financial tools for credit scoring and post-harvest credit access, reducing dependence on middlemen.
- Provide support for embedded finance and agri-credit scoring tools like Krishi Vikas Udyog's dealer subscription model, which helps onboard agri-retailers into digital financing networks.
- Pilot village-level credit facilitation desks with Krishi Mitras or SHG members trained in digital loan onboarding and post-harvest financing, particularly in districts with active FPOs.
- Provide targeted support to unorganized micro food processing units in the form of skilling, entrepreneurship development, technology, marketing, and credit access.
- Promote SBI's proactive role in deploying credit through schemes such as AIF (Agriculture Infrastructure Fund), AHIDF (Animal Husbandry Infrastructure Development Fund), and other government schemes.

3. Design insurance, clustering, and last-mile cold chain for inland fisheries

- Develop targeted insurance products for inland fish farmers that protect against risks such as theft, poaching, and water contamination- risks often excluded from current crop insurance models. Collaborate with Aqua Doctor Solutions, whose real-time water quality diagnostics can serve as the scientific basis for pond-based insurance claims, especially in poaching-prone areas like Birbhum and North 24 Parganas.
- Promote FPOs and fish farmer collectives to invest in shared assets like insulated live fish tanks and decentralized cold storage facilities.
- Create end-to-end cold chain infrastructure such as i.e., temperature-controlled systems that keep fish fresh from pond to market. Subsidise Maribus Solar's GVIT fish transport tanks and MariSense sensor kits for pH, ammonia, and temperature tracking across Bengal-Odisha aquaculture belts.

4. Expand and mechanise Makhana cultivation across East and North East India

- Encourage the cultivation of makhana (fox nut) beyond Bihar, especially in waterlogged regions of Assam (Dhubri, Lakimpur), West Bengal (Malda, Murshidabad), and Eastern Uttar Pradesh (Gorakhpur).



- Promote mechanised popping machines, AI-based grading and sorting systems, and supply chain modernization demonstrated by Shakti Sudha Makhana and House of Makhana.
- Establish the proposed ₹100 crore Makhana Board and increase investment in generic branding (such as public ad campaigns like “Sunday ho ya Monday, roz khao ande”) to build awareness and demand.

5. Support seaweed, biostimulants, and biofertiliser-based agri inputs

- Fund trials and demonstrations of nature-positive agri inputs such as liquid seaweed concentrates, microbial biofertilizers, and organic pest repellents.
- Build farmer awareness of how these inputs improve soil health, reduce chemical dependence, and qualify for export markets or carbon credits.
- Fund scaling of BomLife Hitech Organic’s eco-input model, which was developed around the triple bottom line: environment, finance, and social equity.
- Create demonstration farms for seaweed-based liquid inputs and microbial biofertilizers in tribal-dominated areas like Mayurbhanj (Odisha), Birbhum (WB), and Jalpaiguri.
- Partner with Kheetii Bazaar and Sattvika Agri Labs to distribute natural feed additives and safe, non-antibiotic poultry supplements via e-commerce or rural D2C networks.

6. Enable collective carbon farming and revenue sharing models for FPOs and SHGs

- Establish protocols for measuring carbon savings from improved agricultural practices such as reduced tillage, bio-input use, and diversified cropping. Support 3-5 pilot projects where carbon revenues from voluntary carbon markets (VERs) are pooled and shared via direct transfers to verified SHG/FPO members.
- Help FPOs and SHGs register with carbon credit platforms and share verified emission reductions (VERs) revenues fairly among members.
- Deploy sensor-based MRV systems (Measurement, Reporting, and Verification), including soil health cards and mobile image recognition tools, to ensure transparency and reduce auditing costs.



7. Scale beekeeping clusters and pollination corridors in a women-led model

- Promote women-led beekeeping clusters by providing access to precision-engineered bee boxes built with imported pinewood and scientific training.
- Each cluster consists of around 25–30 women from nearby villages, with each woman receiving 10 hives. This collective model inspired by Amul's model ensures economies of scale and shared learning.
- Introduce and train "Bee Mitras"—local youth trained as bee-health experts who diagnose hive problems (similar to veterinary doctors for bees) and provide ongoing support to beekeepers.
- Use GPS mapping of flowering seasons (mustard in UP, moringa in Odisha, ajwain in Rajasthan) to design migratory "pollination corridors" so hives can be moved to areas with peak flowering, boosting crop yields and bee survival.

8. Revive the tea industry through mechanised harvesting, digital compliance, and wellness-oriented product diversification

- Deliberate ways for addressing labour shortages, especially during peak plucking seasons.
- Invest in the development of new tea plant varieties (erect tea clones) suited for mechanical harvesting to address labor shortages and increase productivity.
- Support adoption of robotic harvesters adapted to Indian terrains and solar-powered post-harvest drying technologies.
- Equip tea growers with AI-based tools to monitor pesticide residue and meet international export standards. Integrate Activia's AI-based pesticide residue detection kits (which detect pesticide residue at the green leaf stage) from Arogyam Medisoft at factory procurement centers to meet EU and Japanese MRL standards.
- Encourage value-added products like decaf tea, theaflavin extracts (with antioxidant properties), and tea-based nutraceuticals and cosmetics.
- Reduce the cost disparity between large estates and small growers, by helping small growers with more mechanisation and equipments like AI-based moisture meters with real-time pH detection, Israel-based weather stations etc.



9. Democratise access to drone services and digital agri-data platforms

- Promote drones equipped with thermal and multispectral cameras for crop health monitoring, irrigation management, and land mapping.
- Support local entrepreneurs and FPOs to establish drone-as-a-service (DaaS) businesses.
- Develop inclusive digital platforms like Krishi Vikas Udyog or Kheetii Bazaar to enable small farmers to rent machinery, access verified inputs and connect directly with agri dealers.

10. Invest in AI and clean energy-based mechanisation for hilly, tribal, and smallholder agriculture

- Advocate lifestyle changes that result in demand for convenient processed foods which create new opportunities in the agri and food processing sectors.
- Since there is little room for expansion, making productivity enhancement and diversification should be the key focus areas.
- In a state in West Bengal with limited cultivable land and a surplus of rice production, diversification into high-value crops and allied activities must take center stage.
- Promote solar-powered agri-tech solutions like solar dryers, sprayers, and dehydrators tailored for remote and tribal areas with erratic electricity supply.
- Support smart irrigation systems that use IoT (Internet of Things) sensors and weather data to automate watering—reducing water use by up to 40%.
- Introduce AI-driven innovations such as HaaS (Harvest-as-a-Service) —where robots are owned by cooperatives and rented to small farmers, similar to how Software-as-a-Service (SaaS) models work in the tech world.
- Adopt a solar-based decentralised energy model tailored for:
 - A. Solar-powered irrigation pumps: proven to double farm income within a year
 - B. Solar dryers: reducing drying time by 50% and improving quality
 - C. Agrivoltaics: dual land use for tea and solar power

The Look East AgTech Summit 2025 has shown that the East is not lagging; it is distinct, dynamic, and ripe with possibility. Through strategic convergence across innovation, finance, policy, and grassroots enterprise, Eastern India can become a powerhouse of sustainable agriculture and inclusive growth. NABARD, as a cornerstone institution, is uniquely positioned to operationalize these recommendations, transforming the region's agri-ecosystem— one innovation at a time.



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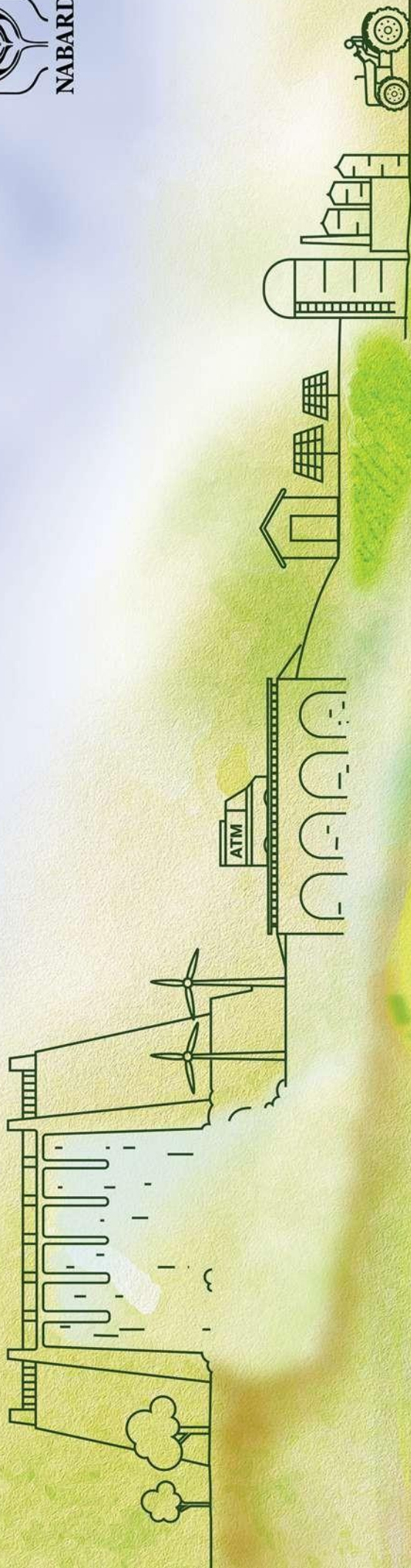


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