

TITE MONTHLY NEWSLETTER

MAY 2025 | Vol. 2 | Issue No. 5

DIRECTOR'S *Note*



Dear Students,

In a country where over half the population is directly or indirectly dependent on agriculture, agribusiness is not just an industry—it's the backbone of our economy. Yet, what often goes unnoticed is the complexity and opportunity it holds beyond the field.

Today, agribusiness management is no longer limited to growing crops. It's about using data to forecast yields, building efficient supply chains, marketing produce smartly, and ensuring that food reaches every corner sustainably. From precision farming to rural entrepreneurship, the sector is expanding faster than ever before—and it needs skilled minds to lead the way.

Why should you care? Because the challenges of food security, climate change, and rural livelihoods won't solve themselves. They need professionals who understand both the soil and the system. Agribusiness offers a space where science, economics, and empathy come together.

At TITE, we believe our students can drive this change. By learning about agribusiness management, you're not just gaining career skills—you're becoming part of something bigger: securing the future of food, farmers, and the planet.

Let this newsletter open your eyes to the world of agribusiness. There's more to it than you think—and it begins with curiosity.

Best wishes,
DR. ANADI CHARAN SAHOO,
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Director (Academics), TITE



A BRIEF HISTORY OF AGRIBUSINESS

Agriculture has always been a reflection of human progress. What began as a necessity for survival has grown into a structured, technology-driven global industry. Here's how agribusiness evolved across the centuries



Early Agriculture (around 8000 BCE)

The foundations of agriculture were laid when early human societies began cultivating land and domesticating animals. In regions like the Fertile Crescent, people moved away from nomadic life and started settled farming. This was the first step toward organized food production.



Ancient Innovations (3000 BCE onwards)

Civilizations such as the Indus Valley, Mesopotamia, and Egypt developed tools like wooden ploughs, irrigation channels, and food storage systems. Farming became more planned, and trade of agricultural goods began across regions.



Traditional Indian Agriculture (up to 1700s)

In India, agriculture remained largely dependent on animal power. Oxen-drawn plows and manual labor were common. Farming methods were passed down through generations, and community-based systems like crop sharing and bartering shaped rural economies.



Scientific Advancements (18th–19th Century)

The Agricultural Revolution in Europe brought innovations like crop rotation, improved tools, and chemical fertilizers. Farming started to be viewed as a science, with focus on improving yields and efficiency.



The Green Revolution in India (1950s–70s)

India underwent a major shift with the introduction of high-yield crop varieties, synthetic fertilizers, and irrigation infrastructure. This period also saw the rise of institutions and policies supporting agriculture at a national scale. Agribusiness started to take shape, connecting farms to suppliers, buyers, and markets.



The Digital Turn (2000s onwards)

Technology entered the field in full force. Tractors with GPS, satellite-based weather predictions, cold storage supply chains, and mobile-based agri-advisory platforms began redefining how farming was managed. Agribusiness became a bridge between tech and traditional practices.

CULTIVATING SMARTER SYSTEMS:

How Technology, Data, and Strategy Are Transforming Agribusiness

Agribusiness today is powered by more than just hard work. It's driven by cutting-edge technology, data analysis, and smart planning. Here's a look at the key innovations reshaping farming from the ground up.



Precision Agriculture: Farming with Data

Gone are the days of one-size-fits-all farming. Precision agriculture uses GPS-guided machinery, soil moisture sensors, and satellite imagery to provide detailed information about crops and fields. Farmers can now apply water, fertilizers, and pesticides exactly where they're needed, improving crop health while reducing waste and costs.



Automation and Robotics: The New Workforce

Labour shortages and the need for efficiency have pushed farms to adopt automation. Autonomous tractors, robotic seed planters, and drone sprayers are becoming common. These technologies increase productivity by performing tasks with speed and accuracy, even in tough weather or terrain.



AI and Digital Twins: Virtual Farming

Artificial Intelligence helps analyze massive amounts of data from farms to predict outcomes like crop yields and pest outbreaks. Digital twins—virtual replicas of farm operations—allow farmers to simulate changes and test strategies without risking real crops, leading to better decision-making.



Blockchain for Transparency and Trust

Blockchain technology records every step of a product's journey, from seed to supermarket shelf. This traceability improves food safety, reduces fraud, and helps consumers know exactly where their food comes from.



Sustainable Practices: Regenerative Agriculture

Farmers are adopting regenerative techniques such as no-till farming, cover cropping, and crop rotation to restore soil health and increase carbon capture. These methods help build long-term resilience against climate change and protect natural resources.



Digital Financing: Empowering Farmers

Mobile-based platforms now offer farmers access to credit, crop insurance, and payment solutions. Using data analytics, these platforms tailor financial products to individual needs, helping farmers invest in better seeds, equipment, and technology.

CAREER CORNER:

Exploring Career Paths in Agribusiness

Agribusiness isn't just about farming—it's a vibrant field full of diverse career opportunities. For students interested in agriculture, business, or technology, here are three exciting paths to consider:



Agri-Tech Startups

Technology is transforming agriculture, and startups are at the forefront. From developing drones that monitor crops to creating apps that predict weather or pest outbreaks, agri-tech offers roles in software development, data science, engineering, and innovation management. Joining or starting an agri-tech company means you can directly contribute to making farming smarter and more sustainable.

Rural Entrepreneurship & Farmer Producer Organizations (FPOs)

Rural entrepreneurship empowers local communities by creating sustainable business models. Farmer Producer Organizations (FPOs) help small farmers pool resources, improve market access, and increase their bargaining power. Careers here involve business development, supply chain management, community engagement, and leadership—helping transform rural economies from within.

Agri-Marketing Platforms

Connecting farmers to consumers and markets is crucial. Agri-marketing platforms use digital tools to improve supply chains, reduce waste, and ensure farmers get fair prices. Roles include marketing, sales, logistics, and data analysis, offering opportunities to work at the intersection of technology and trade.

AGRIBUSINESS IN ODISHA

Odisha is rapidly transforming into a hub for agribusiness innovation, blending traditional practices with modern technology to enhance productivity and sustainability. Here are some noteworthy developments that might pique your interest in this field.



FPO

Strengthening Farmer Producer Organizations (FPOs)

In April 2025, the International Food Policy Research Institute (IFPRI) conducted training workshops for 38 FPOs across all 30 districts of Odisha. These workshops focused on governance, value chain development, and financial management, aiming to empower smallholder farmers and improve their market access.



Agritech Startups Gaining Momentum

Odisha's agritech sector is thriving, with startups like Manikstu Agro, HeyFarmer, and VIR Naturals gaining recognition for their innovative solutions. Manikstu Agro was awarded "Best Agri-Innovation of the Year" at the Odisha Startup Carnival 2024 for its efforts in empowering goat farmers. Bariflo Labs, based in Bhubaneswar, utilizes AI and IoT to address water quality issues in aquaculture.



Promoting Sustainable Agriculture

The government, in collaboration with ICRISAT, launched a 'Compendium of Regenerative Agriculture' in November 2024. This initiative aims to promote sustainable practices such as minimal soil disturbance, crop diversity, and soil cover maintenance, enhancing resilience against climate challenges.



Recognizing Traditional Excellence

Koraput Kalajeera rice, an aromatic variety cultivated in Odisha, received a Geographical Indication (GI) tag in January 2024. This recognition not only preserves traditional farming practices but also opens avenues for premium market access.



Government Initiatives to Boost Agriculture

In the 2025-26 the Odisha government allocated significant funds to support the agricultural sector.

- ₹6,000 crore for the **Samrudha Krushaka Yojana** to support farmers.
- ₹2,020 crore under the **CM-KISAN** scheme for financial aid.
- ₹600 crore for **promoting millet farming** under the **Shree Anna Abhiyan**.
- ₹93 crore for **empowering women in agriculture**.
- ₹425 crore for **farm mechanization and agricultural entrepreneurship**.
- ₹264 crore for promoting agri-enterprises through the **Mukhyamantri Krushi Udyog Yojana (MKUY)**.
- ₹511 crore for Odisha University of Agriculture and Technology (OUAT) to **promote education, research, and extension in agriculture**.

These initiatives reflect Odisha's commitment to transforming its agribusiness landscape, fostering innovation, sustainability, and inclusivity.

LIGHTING FIELDS, LIFTING LIVES:

A CASE STUDY ON SOLAR DIDIS OF BIHAR

In the sun-drenched fields of Ratanpura, Bihar, the story of Devki Devi unfolds like a quiet revolution. She was a farmer's wife, married at fifteen, raising four children and like most women in her village, her life was shaped by scarcity of water, of opportunities, and of choices.

Every summer, she watched the land crack with dryness. Diesel pumps were too expensive to run, and power cuts made things worse. Every time she delayed irrigation, crop cycles were affected. Her land remained dry for days. She couldn't do anything about it.

In 2023, Devki heard of a solar irrigation project supported by the Aga Khan Rural Support Programme. She

didn't have savings, but she had conviction. With guidance, she applied for a ₹1.35 lakh loan through Rang De, a social investing platform.

Thirty strangers contributed. **She became one of the first women in her village to own a solar irrigation pump.**

That decision changed everything.

With her son's help, she learned how to operate the machine. For the first time, she controlled when water reached her crops. She began offering irrigation to nearby farms—first a few, then over 60.

The pump now covers 35 acres across the village. She planned irrigation in slots, used timers to avoid wastage, and managed her own sowing accordingly.

She became known as the Solar Didi.

The Solar Didi of Bihar.



SUNITA DEVI & DEVKI DEVI
The Solar Didis

She started multi-cropping—okra, pulses, and potatoes—based on water availability and market prices. When her income became steady, she invested in a storage shed to help other farmers store perishable vegetables. That gave them an extra 2–3 days to reach bigger markets. Her monthly income now touches ₹1.5 lakh in peak season.

A few kilometres away in Bhagwanpur Dadhya, Sunita Devi followed the same path. She had heard of Devki and got in touch through the network. She raised money, bought her pump, and began irrigation services. But she added more.

She gave advice on crop choices, helped women track basic income and expenses, and offered irrigation bundled with soil testing and crop planning.

Sunita manages around 32 acres, mostly for smallholder farms. She also moved farmers away from flood irrigation, encouraging furrow and drip methods.

She tracked hours of pump use, recorded crop yields, and used that data to change pricing and schedules. Her earnings now support her daughter's school fees and household expenses. "I used to wait for someone else to decide when I'd get water. Now I decide for others," she says.

Devki and Sunita's stories show how **agribusiness isn't confined to cities, exports, or big companies.** It's taking root in India's villages. Through **smart irrigation, financial planning, and community engagement, these women are turning farming into a sustainable service enterprise.**

They reduce input costs, extend support to neighbours, and build a localized, low-carbon rural economy.

These women are not only cultivating land, they're building a business at the heart of India's agricultural transformation.

FOOD FOR THOUGHT

What Does It Mean to Be Efficient?

Efficiency. The word sounds simple enough. Like something you can slap onto a resume “Good at efficiency” and boom, instant credibility. But what does it really mean, especially for an engineer walking into a world that demands more with less?

It's tempting to think efficiency is just about speed—get things done fast, cut costs, squeeze every drop of juice from the lemon. But here's the catch: rushing doesn't equal efficiency. Ever seen a bridge built in a hurry collapse before it even opens? That's efficiency gone wrong. Fast isn't always smart.

Efficiency means thinking two steps ahead. It means designing a system or product that isn't just cheaper or quicker but smarter—something that stands the test of time, not just the deadline. Imagine a machine that runs smoothly for years without constant repairs, or a software system that doesn't crash on day one. That's efficiency with brains and heart.

And it's about balance.

Between speed & quality.
Between innovation & reliability.
Between cost & impact.

Because the world doesn't need more fast-and-fragile solutions; it needs work that lasts and matters.

So, as you gear up for your engineering journey, remember: **efficiency isn't about racing to the finish line; it's about running the race well.**

It's not just doing more with less—it's doing better with what you have. The future doesn't just want your hustle; it wants your wisdom.





“The farmer is the only man in our economy who buys everything at retail, sells everything at wholesale, and pays the freight both ways.”

John F. Kennedy

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