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# SOWING SEEDS FOR A RESILIENT TOMORROW

**A**s we stand on the cusp of the Union Budget 2026, the air across India's vast rural landscape is thick with both anticipation and a profound sense of urgency. Agriculture remains the indisputable backbone of our national economy, yet as we look toward the horizon, the very definition of farming is undergoing a radical, necessary transformation that demands our immediate attention. This edition explores the strategic roadmap required to transition to a tech-driven, climate-resilient powerhouse capable of feeding a growing population.

The challenges of the past year, ranging from erratic monsoon patterns and unseasonal rains to volatile global commodity prices, have highlighted a critical truth: our growth must be structural rather than merely seasonal or reactive. We expect this year's budget to move decisively beyond the temporary relief of short-term subsidies and pivot toward substantial long-term capital infusion into rural assets. Central to this vision is the urgent need for climate-smart infrastructure. With the previous year witnessing record temperatures and shifting climatic zones, the focus must now shift toward incentivizing micro-irrigation systems and the widespread adoption of heat-resistant, bio-fortified crop varieties to safeguard our national food security.

True progress hinges on empowering the individual at the grassroots level. Strengthening the Farmer Producer Organization (FPO) ecosystem is vital to ensuring that smallholder farmers possess the collective bargaining power and logistical support needed to compete in an increasingly complex and globalized market. The digital push and AI-driven precision farming offers a golden opportunity to scale rural startups, provided the budgetary allocations match the bold ambition of our homegrown innovators.

The narrative of Indian agriculture is no longer just about gross yield; it is about sustainable value addition and income security. Prioritizing the food processing sector and cold-chain logistics shall drastically reduce post-harvest losses. This edition serves as a guide to the policy shifts necessary to secure our food systems. We invite you to dive into these pages, engage with the expert insights, and join the conversation on how we can collectively nurture a prosperous, sustainable, and dignified future for every Indian farmer.



**Rajni Shaleen Chopra**



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## From the CEO's desk

### Union Budget 2026 – Charting a Prosperous Farm Future



**A**s India strides into 2026, the agricultural sector stands at a transformative crossroads. Farmers, who feed the nation and anchor rural economies, grapple with mounting challenges—erratic monsoons, soaring input costs, fragmented supply chains, and global disruptions—yet brim with immense untapped potential. The Union Budget 2026 offers a pivotal moment to nurture this vital backbone, steering it toward sustainability, resilience, and inclusive prosperity.

Expectations soar across the sector. Will we witness amplified investments in precision agriculture? Cutting-edge technologies like AI-driven crop monitoring, drone-based pest surveillance, and real-time soil health sensors have delivered remarkable results in pilot projects spanning Punjab's wheat fields, Maharashtra's sugarcane belts, and Tamil Nadu's paddy fields. Scaling these innovations via targeted subsidies, robust digital infrastructure, and farmer training could dramatically slash fertilizer consumption by 20% while lifting yields 15-20%, empowering the 86% of smallholders who form our farming bedrock. Initiatives like Kisan e-Mitra apps and satellite-linked advisories, already tested successfully, can bridge the digital divide in rural heartlands.

Climate resilience must claim top priority. As extreme weather intensifies—floods in the east, droughts in the Deccan—enhanced funding for micro-irrigation networks, climate-smart drought-resistant seeds, and an upgraded Pradhan Mantri Fasal Bima Yojana (PMFBY 2.0) with faster claims and broader coverage becomes vital. Natural farming initiatives, already gaining traction in Sikkim and Andhra Pradesh models, deserve expansion to reward eco-conscious growers with premium markets and certification support, aligning with global organic demands.

Market reforms demand urgency too. Bolstering Farmer Producer Organizations (FPOs), modernizing APMC mandis with seamless e-trading platforms, and forging favourable Free Trade Agreements—like the India-EU pact—can fling open export doors for superfoods such as millets, spices, and premium horticulture, aiming for \$100 billion in agri-exports by 2030. Streamlined logistics and cold-chain infrastructure will minimize post-harvest losses, currently hovering at 20-30%.

The future hinges on empowering youth and women. Dedicated skill programs in agri-mechanization, incubation funds for agro-processing startups, and gender-targeted schemes promise to curb rural exodus while generating 50 lakh jobs, infusing fresh vitality into villages.

Nurturing India's agri future is our collective imperative. As we look forward, let us champion a budget that ensures agricultural growth and catapults it to global leadership.

**Haris Khan**

# INDIA-EU'S AGRI GAME-CHANGER

**T**he India-European Union Free Trade Agreement (FTA) is far more than a bilateral trade accord. When two economic blocs – that together account for around 25–30% of global GDP, nearly one-third of global consumers (over 2.1 billion people), and about one-third of world trade – align their trade, regulatory, and sustainability frameworks, the impact inevitably ripples across global markets. In agriculture and food, this agreement has the potential to recalibrate global supply chains, redefine standards, and influence how food is produced, traded, and consumed worldwide.

## A New Centre of Gravity in Global Food Demand

India and the EU represent two distinct yet complementary food economies. India is among the world's largest producers of agricultural commodities, with over 140 million hectares of arable land, nearly 150 million farm households, and a rapidly expanding food processing sector. The EU, in contrast, is one of the world's largest agri-food importers, with annual agri-food imports exceeding USD 200 billion, driven by high purchasing power and increasingly sustainability conscious consumers.

By integrating these two systems more

**In agriculture and food, this agreement has the potential to recalibrate global supply chains, redefine standards, and influence how food is produced, traded, and consumed worldwide**



deeply, the FTA creates a new centre of gravity in global food demand and supply. This alignment will influence international prices, sourcing strategies of multinational food companies, and global investment flows. India's agri-food exports to the EU—already valued at over USD 10–12 billion annually—are expected to scale significantly as tariffs are reduced and regulatory barriers streamlined. Exporters from Latin America, Africa, Southeast Asia, and Oceania will increasingly find themselves competing in a marketplace reshaped by India's improved access, scale, and competitiveness.

## Setting Global Benchmarks Through Scale

One of the most far-reaching global im-

pacts of the India-EU FTA lies in standards-setting. The EU has long played a defining role in shaping global norms on food safety, traceability, sustainability, and environmental compliance. India's deeper integration into this regulatory ecosystem means that a substantial share of global agricultural production—by virtue of India's scale—will increasingly align with EU benchmarks. Given India's position as one of the world's top producers of staples, spices, fruits, vegetables, and marine products, this alignment will not remain confined to EU-bound exports. Once supply chains upgrade to meet EU requirements, the same standards tend to apply across multiple destinations.



About the **AUTHOR**

**Dr. MJ Khan is Executive Director, World Agriculture Forum and Chairman of the Agriculture Today Group**



### Rewiring Global Agri-Food Value Chains

The agreement accelerates a shift from commodity-led trade to value-chain-led trade. Global demand for processed and high-value foods is expanding rapidly, with the global processed food market projected to exceed USD 7 trillion by 2030. India's food processing sector—currently valued at around USD 300 billion—stands to benefit from greater EU market access, investment, and technology transfer. As Indian exports expand in processed foods, ready-to-eat meals, specialty ingredients, nutraceuticals, and ethnic foods, global food companies are likely to rebalance sourcing and investment strategies.

### Climate, Carbon, and the Future of Food Trade

The FTA's forward-looking engagement on sustainability and climate – especially in the context of carbon-related measures – signals a decisive shift in global agri-food trade. Agriculture already accounts for nearly one-quarter of global greenhouse gas emissions, and food systems are under growing scrutiny. When two blocs of this scale embed climate considerations into trade frameworks, sustainability be-

comes a commercial baseline rather than a voluntary aspiration. This will influence producers worldwide. Countries exporting to either India or the EU will face increasing pressure to adopt climate-smart practices, while India's low-input farming traditions, regenerative models, and rapidly growing agri-tech ecosystem—now attracting over USD 1.5 billion annually in investment—could offer scalable solutions for the Global South.

### Strengthening Global Food Security and Stability

At a time when climate shocks and geopolitical disruptions have exposed vulnerabilities in global food systems, the India–EU FTA contributes to stability. India is among the world's largest producers of cereals, pulses, milk, and fruits, while the EU remains a critical hub for food trade and logistics. A predictable, rules-based agri-food corridor between the two strengthens resilience not just bilaterally, but globally. For net food importing regions – particularly parts of Africa and West Asia – a stronger India–EU agri-food axis can help diversify supply sources and moderate volatility.

### A Catalytic Role for Global

### Collaboration

The World Agriculture Forum (WAF) greatly welcomes the conclusion of the India–EU FTA and views it as a landmark development for global agriculture and food systems. WAF looks forward to playing a catalytic role in translating this agreement into tangible outcomes on the ground—mobilising policymakers, farmers' organisations, agribusiness leaders, investors, and technology providers.

Beyond implementation, WAF aims to positively influence momentum toward more such forward-looking trade and cooperation frameworks globally. By encouraging greater trade, investment, and technology flows, these agreements can empower farmers, expand consumer choice, strengthen food security, and accelerate the transition toward sustainable and inclusive agri-food systems worldwide. In this sense, the India–EU FTA is not merely a bilateral deal – it is a global signal. When nearly one-third of the world's economic output and consumers align around agriculture, food, sustainability, and trade, the global system responds. The opportunity now lies in ensuring that this alignment delivers measurable gains for farmers and consumers across the world.

# RECKONING THE AGRICULTURE SECTION IN UNION BUDGET 2026

Let me begin by discussing the current situation of agriculture in the nation, which provides a direct or indirect source of income for 46.1% of the people. In rural areas, it accounts for 65% of the main source of income. For millions of people, agriculture serves as a lifeline, the basis of rural lives, and the cornerstone of food and nutritional security. It is more than just an alternative economic sector. Nearly half of India's workforce is employed in agriculture, which also makes a substantial economic contribu-

tion (around 18–20% of GVA).

Almost the past ten years, food grain production in India has increased by almost 100 million tons, from 253 million tonnes in 2014–15 to an all-time high of 355 million tonnes in 2024–2025. In a similar vein, we were able to increase horticultural yield by 96 million tons from 273 million tons in the base year of 2014–15 to 369 million tons in 2024–2025. The spirit of our farmers, favorable government policies, and widespread acceptance of new technology produced by the Na-

tional Agriculture Research and Education System have all contributed to some of the recent successes. Through a number of innovative and advantageous policies and programs pertaining to inputs, insurance, post-harvest management, mechanization, marketing, and technology, the Indian government has in-

## About the **AUTHOR**

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creased its support for the agriculture industry in recent years. In order to turn agriculture from a welfare sector into a more powerful engine of economic growth, the emphasis has been on increasing farmer income, irrigation, infrastructure in agriculture, encouraging climate-resilient farming and technology, and implementing reforms for input quality control and improved credit availability.

The sector was successfully transitioned by the budgets announced over the past ten years, increasing farmer incomes and ensuring the country's food security. In the meantime, the government is working toward the lofty goal of having a \$5 trillion GDP by 2028–2029. Additionally, as part of Viksit Bharat 2047, the government hopes to become a global leader in food systems by that year. During the introduction of Viksit Bharat 2047, the Hon'ble PM stated that India is about to undergo a significant transformation in its history. Every year's budget is taken into consideration as a step toward achieving the objective.

**In order to lower post-harvest losses in perishable crop commodities, the available cold storage capacity of 40 million tonnes should be raised to 69 million tonnes over the course of the next five years, or roughly 6 million tonnes annually**

Here are the main areas of concentration that we believe will be crucial to the nation's agricultural prosperity.

#### **Agri Innovation Should Be Priority**

Diverse production of food grains, pulses, fruits, vegetables, milk, animals, and fisheries is becoming more and more in demand. In India, the demand for vegetables

is predicted to increase by 37% by 2030, while the demand for cereals is predicted to increase by 11%. It is anticipated that the current population of 145 crore will rise to 151 crore by 2030 and 164 crore by 2047. In contrast to the current level of 355 million tonnes, we must produce 520 million tons of food grains by 2047. Additionally, compared to the current level of 338 million tonnes, 649 million tonnes of fruits and vegetables will be needed. Only an increase in productivity can lead to an increase in production.

Numerous studies have shown that there is a significant yield disparity for the nation's main crops. The yield gap is influenced by biophysical and socioeconomic factors. Nutrient imbalances and deficiencies (NPK, zinc, etc.), water stress, flooding, poor planting (timing or density), soil issues, weed pressures, insects, diseases, seed quality, etc. are examples of biophysical variables. It is necessary to address socioeconomic concerns such as inadequate credit, noncompliance, ignorance of best practices, profit maximization strategy, etc.

Plant breeders should employ cutting-edge methods to improve food security and overcome yield constraints.

Adopting new techniques and making greater use of technology can significantly boost our production levels. In order to develop climate-resilient varieties and biofortified varieties, new technologies such as gene editing must be used to break through yield barriers. The Department of Agricultural Research and Education, of which the Indian Council of Agricultural Research is a significant constituent, should get additional funding to support the suggested developments in agricultural research. The government's action will undoubtedly aid the scientific community in developing sustainable agricultural advances.

### Accelerating The Diversification Of Agricultural Production

Budgetary provisions should be made by the government to speed up production diversification. High-value commodities including fruits, vegetables, spices, floriculture, medicinal crops, and aromatic crops must take precedence over cereals. The need for wholesome horticultural goods is always rising. Aside from gardening, pulses might be a choice because they include proteins and are therefore more nutrient-dense. By using the cluster model, our nation must increase its own capacity to produce more high-value crops. In addition to boosting output, it will replace imports (approximately 5-7 lakh tons for fruits and 1-2 million tons for pulses). In order to achieve nutritional security for individuals, crop production diversification will aid in dietary diversification. Apart from focus on improving productivity, we should ensure that farmer adopt good agricultural practices for safe food production free from pollutants and chemical residues.

### Infrastructure In Agriculture

Infrastructure development is crucial to agriculture at every level, from input supply to crop seeding to post-harvest management. In order to increase productivity and lower post-harvest losses, targeted investment in the agriculture infrastructure sector is crucial. This will also lead to capacity building and increased revenue



To achieve the objective of reducing greenhouse gas emissions from agriculture from 15% to 5% in the upcoming years, incentives for the adoption of green energy methods for soil preparation, water conservation, soil health improvement, and agri-waste management should be provided



generation. Due to a lack of essential agricultural infrastructure, such as pack houses and storage facilities, as well as an inadequate supply chain, post-harvest losses are comparatively higher in India. In order to lower post-harvest losses in perishable crop commodities, the available cold storage capacity of 40 million tonnes should be raised to 69 million tonnes over the course of the next five years, or roughly 6 million tonnes annually.

I am aware that this is a lofty goal, but with the private sector's help, it is achievable. Over the past ten years, the country's irrigation efficiency has grown, with 95 lakh hectares of land covered by microirrigation under PMKSY's PDMC. Additionally, if PDMC allocations are improved, priority areas of recognized overexploited dark zone blocks may see increased coverage. 839 of the 5723 blocks in the nation that the Central Ground Water Board evaluated are in the overexploited dark zone. Budgetary allocations for support should, in general, be provided with an emphasis on dark zones under pertinent mission programs.

### Bio-Solutions Should Be In Limelight In Budget

Any agricultural property that employs organic or biodynamic farming practices without the use of artificial fertilizers or agricultural chemicals is referred to as "bio-solutions" in agriculture. Biosolutions, to

put it simply, are techniques for producing nutrient-dense, high-quality food without using a lot of traditional pesticides and fertilizers. The fundamental idea is to help improve cropping cycles, renew soils with organic materials, and regulate the environment both above and below the soil. Such protocols must be developed for various agricultural products, and farmers must educate themselves on the principles of creating active, healthy soil while preserving natural biological processes in order to find respite from pests, illnesses, and weeds.

In order to alternate reliance on synthetic inputs like pesticides, fungicides, herbicides, urea, phosphates, and potash fertilizers, the research sector should develop management systems that take biological cycles and other interactions into account. Budgetary attention should be given to biofertilizers, biopesticides, including biocontrol agents, and biostimulants. A key element of sustainable agriculture is the use of biofertilizers for nutrient management. By supplying enough nutrients, the many plant-associated microorganisms included in biofertilizers promote plant growth and increase produce yield and quality. Just as biofertilizers are emerging as green alternative to chemical fertilizers, biopesticides have a huge role to

play in sustainable management of crop pests and pathogens.

Biopesticides led the market accounting for the largest share of over 56% in last few years and likely to expand further. This high share is attributed to the increasing consumption of biopesticides in agriculture. Some of the key products are microbial pesticides, sex pheromones and traps. The highly utilized microbial pesticide includes strains of *Bacillus thuringiensis*, which forms a protein mix to kill the pests.

The alternate option to scale down the use and dependence on chemical insecticides is to employ biological control agents, which keep a check on pest population build-up with minimal harmful impact on the environment. The shift from the practice of non-judicious use of chemical pesticides to biocontrol agents essentially requires active search for potential bioagents. The biostimulants are another category of are also gaining significance for enhancing crop productivity, growth, and health.

Biostimulants so called bioenhancers are now known for improving plant nutrient-use efficiency, environment stress tolerance such as drought, salinity and also improve quality. High-performance bio-agriculture products must be developed and promoted in order to

boost the use of sustainable farming practices.

### Thrust Areas

We foresee a profitable, climate-resilient, tech-enabled, and sustainable agricultural. Experts previously stressed that agriculture's value must double from about US\$0.45 to US\$1 trillion in order to reach a US\$10 trillion economy by 2047. Better supply chains, higher-value crops, agri-entrepreneurship, and sustainability are all ways to transform the industry in addition to boosting production. Promotional policies must further encourage investment in agri-R&D, infrastructure, cold chains, traceability, processing, and carbon-smart farming in order to achieve this goal. In addition to providing food for the country, agriculture must support exports, technological advancement, and climate resilience.

The circumstances need embracing contemporary techniques while maintaining a sense of societal purpose. Biofortified crops, carbon markets, AI diagnoses, and precision farming are all significant potential, but there is still a lack of attention in a few areas. In order to empower rural communities, collaborate with farmers to develop solutions, establish businesses, and carry out significant research, we must figure out how to spread knowledge-driven solutions and skills.

In order to reduce greenhouse gas emissions from agriculture from 15% to 5% in the upcoming years, incentives for the adoption of green energy methods for soil preparation, water conservation, soil health improvement, and agri-waste management should be provided. To modernize the industry, it is necessary to emphasize climate-smart agricultural techniques, including digital infrastructure. By doing this, it will contribute to the development of agriculture in the future. Indian agriculture has a bright future because of the government's favorable policies during the past many years, and you are the future. The Ministry of Agriculture and Farmers' Welfare's budget is expected to rise by 20% from ₹1.37 lakh crore (2025–2026) in order to effectively carry out the main agricultural initiatives in 2026–2027.



# Used Cooking Oil

## From Public Health Risk To Strategic Resource

Used Cooking Oil (UCO) has traditionally been viewed as an unavoidable by-product of food preparation—something to be reused until exhausted or discarded without much thought. In India, as in many developing economies, this perception has resulted in unsafe reuse practices and environmentally damaging disposal methods. However, as the country advances towards a circular economy and cleaner energy systems, UCO is increasingly being recognised not as waste, but as a strategic resource. Its transformation from a food safety risk into a valuable biofuel feedstock highlights the intersection of public health, environmental protection, and energy security.

### Understanding UCO and Its Risks

Used Cooking Oil refers to edible vegetable oils and fats that have been repeatedly heated during cooking or food processing and are no longer safe for human consumption. Prolonged heating causes chemical degradation through oxidation, hydrolysis, and polymerisation, leading to the formation of harmful compounds such as total polar compounds (TPC), free fatty acids, and polycyclic aromatic hydrocarbons (PAHs).

Once these degradation markers cross prescribed safety limits, the oil must be removed from the food chain. The health implications of reusing de-

graded oil are significant. Studies link prolonged consumption of food prepared in repeatedly heated oils with cardiovascular diseases, gastrointestinal disorders, neurological impacts, and increased cancer risk. PAHs formed during repeated frying are known to be mutagenic and carcinogenic, with long term exposure associated with colorectal, stomach, breast, and oesophageal cancers.

Despite these risks, unsafe reuse remains common, particularly among small eateries, street vendors, and households, driven by cost pressures and limited awareness.

### Environmental Consequences of Improper Disposal

Beyond food safety, improper disposal of UCO creates serious environmental challenges. When poured into drains, fats, oils, and grease (FOG) accumulate and solidify, forming blockages commonly known as “fatbergs.” These block sewer systems, increase flooding risks during monsoons, and impose sub-

stantial costs on municipal wastewater treatment infrastructure. Disposal on open land or into water bodies contaminates soil and aquatic ecosystems, increases chemical oxygen demand, and disrupts marine life. These environmental and public health externalities underline why UCO management is not merely a waste issue but a systemic challenge with economic, ecological, and social dimensions.

### Scale of UCO Generation in India

India’s growing UCO challenge is directly linked to its rapidly rising edible oil consumption.

About the **AUTHOR**

**Dr. B.V. Mehta is Executive Director, The Solvent Extractors’ Association of India**



Over the past two decades, edible oil consumption has more than doubled, reaching nearly 26 million tonnes annually. This growth reflects population expansion, rising incomes, urbanisation, and changing dietary preferences, particularly increased consumption of fried and processed foods. Applying conservative international estimates that 10–15 percent of edible oil consumption eventually becomes UCO, India currently generates around 3 million tonnes of UCO each year. With edible oil consumption projected to rise to 33–35 million tonnes by 2030, annual UCO generation could increase to 3.3–5.2 million tonnes. This growing volume presents both a risk—if misused—and an opportunity if systematically collected and repurposed.

### Sources and Market Dynamics

The HoReCa sector (Hotels, Restaurants, and Cafés) is the largest generator of UCO, accounting for the majority of volumes due to intensive frying operations. Food processing industries also contribute significant and relatively consistent quantities. Households generate smaller volumes individually, but collectively represent a large, largely untapped source. In India's emerging UCO ecosystem, public sector oil marketing companies act as anchor buyers for UCO-based biodiesel, while private aggregators and digital platforms collect and consolidate oil from dispersed sources. Biodiesel producers convert aggregated UCO into fuel, and large food service chains serve as concentrated generators. However, aggregation remains the weakest link. Fragmented supply, high logistics costs, price sensitivity, and competition from informal buyers often divert UCO away from formal, traceable channels.

### Policy Response and the RUCO Framework

Recognising the risks of unsafe reuse, India has introduced a regulatory framework under the Food Safety and Standards Act, 2006. A key provision is the prescription of a maximum 25 percent Total Polar Compounds limit for frying oils, beyond which oil is deemed unsafe. Building on this, the Food Safety and Standards Authority of India (FSSAI) launched the Repurpose Used Cooking Oil (RUCO) initiative to formalise

Unlocking used cooking oil's full potential in India requires coordinated action across food safety regulation, waste management, and energy policy

collection and repurposing for non-food applications, primarily biodiesel. RUCO enables registration of food business operators, authorisation of aggregators, linkage with biodiesel producers, and digital traceability of UCO flows.

While progress has been made, particularly among organised food businesses in urban areas, participation remains uneven. Enforcement has largely been facilitative rather than punitive, reflecting the highly informal nature of India's food sector and the need to prioritise awareness and ecosystem development.

### UCO and India's Biofuel Strategy

India's biofuel programme has achieved remarkable success in ethanol blending, reaching nearly 19 percent in petrol in the 2024–25 supply year—well ahead of schedule.

However, this success has been driven largely by first-generation feedstocks such as sugarcane and food grains, intensifying concerns over land use, water stress, and food security. The “food versus fuel” dilemma has become increasingly evident.

In contrast, biodiesel blending in diesel remains below one percent, constrained primarily by feedstock availability rather than processing capacity. UCO offers a strategic solution to this imbalance. As a waste-derived, non-food feedstock, it does not compete with edible oils or oilseeds, nor does it require additional land or water. Its use reduces dependence on imported edible oils and

fossil fuels while delivering significant greenhouse gas emission reductions.

Recent data show a sharp increase in UCO utilisation for biodiesel from 2024 onwards, coinciding with higher biodiesel production and capacity utilisation. Yet even at projected levels, UCO-based biodiesel uses only a fraction of the estimated UCO generated annually, highlighting substantial untapped potential.

### Learning from Global Best Practices

International experience demonstrates that effective UCO management requires structured value chains tailored to source, volume, and quality. Countries such as Japan and several EU members incentivise household collection through municipal drop-off points and reward schemes.

In Europe and Singapore, restaurants are subject to mandatory reporting and certified collection systems, supported by digital traceability. Large industrial kitchens and hotels often supply high-quality, pre-filtered UCO directly to biodiesel producers under long-term contracts. While technical standards often focus on fuel quality rather than explicit feedstock degradation limits, robust testing, traceability, and certification ensure compliance and sustainability.

### Strategic Way Forward

Unlocking UCO's full potential in India requires coordinated action across food safety regulation, waste management, and energy policy. Strengthening aggregator networks, expanding decentralised collection and testing infrastructure, and providing assured offtake for biodiesel are critical. Equally important is large-scale awareness among households and small food vendors regarding health risks and disposal options. UCO's journey from kitchen waste to clean energy feedstock exemplifies the principles of the circular economy. By closing the loop between consumption and energy production, India can transform a growing risk into a powerful resource—enhancing public health, protecting the environment, and strengthening energy security.

# REINFORCING AGRICULTURE AS THE FOUNDATION OF RURAL AND ECONOMIC GROWTH



## About the **AUTHOR**

**Mr. Sanjay Aggarwal is the Managing Director Indogulf Crop Sciences Ltd.**

**With over 27 years of experience in the agrochemical industry, Mr. Aggarwal has been associated with Indogulf Crop Sciences Ltd. as the Managing Director since 1997. Under his visionary leadership, the company has achieved remarkable growth and established a strong presence not only in India but also across global markets.**

**Mr. Aggarwal has done significant advancements in the company's manufacturing facilities, introducing modern practices and innovative processes. His professional approach and out-of-the-box thinking have transformed Indogulf Crop Sciences Ltd. into a world-class organization, recognized for excellence in operations and commitment to quality.**

**Through his dedication and foresight, Mr. Sanjay Aggarwal continues to inspire the organization, driving it towards new heights of success and sustainability in the agrochemical sector**

**A**s India approaches Union Budget 2026, the agricultural sector stands at a turning point. For decades, policy has focused on increasing production volumes and cushioning farmers with subsidies. While this has ensured food security, the next phase of growth must be built on quality, sustainability, and resilience. For companies engaged in crop nutrition and crop protection, this budget is not just a fiscal exercise—it is a chance to align national priorities with the science of healthier soils, stronger crops, and safer harvests.

### Strengthening Nutritional Security Through Balanced Crop Nutrition

Indian soils are under stress from decades of intensive cultivation. Nutrient imbalance, declining organic matter, and over-reliance on a few inputs have constrained productivity. Budget 2026 can address this by:

- Incentivizing balanced fertilization programmes that integrate macro and micronutrients.
- Supporting soil health mapping and digital advisory platforms to guide farmers toward precise input use.
- Expanding schemes for bio-fertilizers and nutrient-efficient formulations, reducing dependency on imports while enhancing sustainability.

Such measures will not only raise yields but also improve the nutritional quality of food crops, directly contributing to national health goals.

### Crop Protection as a Pillar of Quality and Export Competitiveness

Global markets demand residue-free, high-quality produce. To meet these standards, crop protection must evolve from reactive spraying to integrated pest management (IPM) and precision application technologies. Budget 2026 should prioritize:

- Investments in modern testing labs and certification systems for pesticide residues and food safety.
- Support for digital traceability platforms that assure buyers of compliance with international norms.
- Incentives for biologicals and safer

**Union Budget 2026 offers a rare opportunity to recalibrate Indian agriculture. By shifting focus from subsidies and sheer production volumes to quality, innovation, and resilience, India can position itself as a global leader in sustainable farming. For crop nutrition and crop protection companies, this is the moment to align science with policy, ensuring that every rupee invested translates into healthier soils, safer crops, empowered farmers, and stronger markets.**



chemistries, enabling farmers to access premium markets while protecting ecosystems.

By embedding crop protection into the quality agenda, India can transform its export potential from volume-driven to value-driven.

### Large-Scale Programmes Anchored in Crop Resilience

Focused missions on pulses and oilseeds have shown the power of scale. Extending this approach to crop nutrition and protection can accelerate outcomes:

- Seed-to-harvest nutrition programmes that ensure productivity gains across regions.
- Climate-resilient crop protection strategies to safeguard against unpredictable weather and emerging pest pressures.
- Public-private partnerships to de-

liver last-mile extension services, ensuring farmers adopt best practices consistently.

Such programmes will stabilize farm incomes while reinforcing India's food security in a volatile global environment.

### Innovation and Industry Participation

The future of agriculture lies in innovation. Crop nutrition and protection companies are ready to partner with government and academia to:

- Scale up R&D in climate-smart inputs and digital advisory tools.
- Foster start-up ecosystems that bring disruptive technologies—AI-driven pest detection, drone spraying, nutrient sensors—closer to farmers.
- Build export-oriented clusters where industry expertise ensures compliance, competitiveness, and farmer profitability.

Budget 2026 must recognize industry not as a peripheral player but as a growth engine capable of driving rural employment, value addition, and global competitiveness.

### From Subsidies to Sustainability

Union Budget 2026 offers a rare opportunity to recalibrate Indian agriculture. By shifting focus from subsidies and sheer production volumes to quality, innovation, and resilience, India can position itself as a global leader in sustainable farming. For crop nutrition and crop protection companies, this is the moment to align science with policy, ensuring that every rupee invested translates into healthier soils, safer crops, empowered farmers, and stronger markets.

# NOURISHING LIVES, STRENGTHENING SYSTEMS

## JOURNEY IN 2025 AND THE ROAD AHEAD

India, the fourth largest and one of the fastest growing economies in the world, is fundamentally an agrarian economy. While agriculture contributes about 16% to the national GDP, it supports nearly 46.1% of the population. With almost two-thirds of the nation directly or indirectly dependent on agriculture for employment, income, and food security, the sector remains the backbone of the Indian economy.

Despite its pivotal role, Indian agricul-

ture is inherently vulnerable. Heavy dependence on monsoon rainfall, fragmented landholdings, weak financial capacity of farmers, and the increasing frequency of climate-related shocks have made agriculture a high-risk activity. In this context, agricultural insurance serves as a critical risk management instrument, helping farmers mitigate financial losses, stabilize incomes, and sustain agricultural production.

Over the last decade, India's agricultural insurance ecosystem has evolved

significantly. However, it now stands at a crucial inflection point. Climate variability, expanding exposure across crops and allied activities, and growing fiscal pressures have exposed the limitations of a framework largely centred on scheme administration and premium subsidies. The next phase of reform must therefore focus on building a universal, technology-enabled agricultural risk architecture, rather than expanding fragmented or scheme-specific interventions.

This transition necessitates structural reforms in taxation, technology enablement, premium financing, subsidy rationalization, and disaster risk management. The agriculture insurance sector has high expectations from the Union Budget 2026-27 to address these issues and strengthen the safety net for India's farming community, the Annadata of the nation.

### Ensuring Tax Neutrality Across Agricultural Insurance

One of the foremost issues requiring attention is tax asymmetry. The Pradhan Mantri Fasal Bima Yojana (PMFBY) and the Restructured Weather Based Crop Insurance Scheme (RWBCIS), launched on

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18 February 2016, have rightly been accorded tax neutrality. However, insurance products outside PMFBY/RWBCIS, covering aquaculture, fisheries, livestock, and other allied agricultural activities, continue to attract indirect taxes on premiums and related services.

This increases the cost of insurance, making such products unaffordable for farmers with limited paying capacity, discouraging diversification of insurance offerings and constraining innovation. From a public finance perspective, this also increases future contingent liabilities by suppressing insurance penetration and increasing dependence on post-disaster relief. To enable comprehensive risk coverage across the agricultural value chain, insurance premiums for all agricultural and allied activities should be treated uniformly and kept tax-exempt.

### Technology Enablement and Incentives for Innovation

Policy support for agricultural insurance has historically focused on premium subsidization. While subsidies improve affordability, they do not fully address the structural needs of a modern risk-transfer system. Pricing accuracy, underwriting discipline, claims credibility, and operational efficiency increasingly depend on high-quality data, advanced analytics, and robust technology infrastructure.

A more sustainable approach would be to complement premium subsidies with direct incentives for insurers investing in agricultural technology and research. Targeted tax incentives, innovation-linked subsidies, and structured public-private partnerships can encourage investments in satellite imagery, remote sensing, AI-driven yield estimation, weather analytics, and digital claim settlement systems tailored to Indian conditions.

### Universalization of Basic Agricultural Risk Coverage

Perhaps the most transformative reform would be a shift from farmer co-premium contributions towards universalization of basic agricultural risk coverage. Under such a model, the entire premium for basic yield-based coverage could be jointly funded by the Centre and States, ensuring

**The insurance industry looks forward to a progressive, pro-agricultural insurance Union Budget 2026–27 that can help India decisively move from fragmented interventions to a truly universal agricultural risk management framework**



automatic protection for all eligible farmers.

This approach would significantly expand the risk pool, reduce premiums through economies of scale, limit adverse selection, and convert crop insurance into a standard entitlement rather than a discretionary purchase. It would also enable governments to transition from unpredictable post-disaster expenditure to planned, rules-based risk financing, ensuring faster payouts, greater transparency, and reduced fiscal volatility.

The Union Budget 2026–27 may facilitate this transition through higher budgetary allocations and an increased Central subsidy share of around 70–80% for States opting for universalization. For States not immediately positioned to adopt universal coverage, enhanced Central support for basic risk coverage could increase insurance penetration and incentivize gradual adoption. Alternatively, fully subsidized coverage in North Eastern States and higher subsidy support for crops such as millets and oilseeds may be considered to promote crop diversification and phased universalization.

### Strengthening Livestock and Fisheries Insurance

Livestock contributes nearly 16% to total farm income, yet insurance penetration remains below 2%. While crop insurance benefits from a nationally standardized framework under PMFBY, livestock insurance under the National Livestock Mission (NLM) remains fragmented and underpenetrated.

There are strong expectations from the Union Budget 2026–27 for enhanced allocations towards livestock and fisheries insurance, with the introduction of a centrally standardized framework similar to PMFBY. Such an approach would significantly expand coverage, stabilize rural incomes, and provide holistic protection across crops and allied activities.

### Alignment With the 16th Finance Commission

The upcoming fiscal year coincides with the commencement of the 16th Finance Commission award period (2026–31), presenting a unique opportunity to align Central and State subsidies within a modernized fiscal framework for agricultural risk management.

### Higher Budgetary Allocation Needed

Agricultural insurance requires higher budgetary allocation with focused attention on priority areas such as non-loanee farmer enrolment, technology infrastructure, parametric insurance for high-value crops, livestock insurance expansion, increased Central share of subsidies, and farmer awareness and education.

Tax neutrality across all agricultural insurance products, incentives for technology and R&D, universal basic coverage jointly funded by the Centre and States, reduced reliance on ad-hoc relief, and PMFBY-style standardization for livestock insurance are essential for building a sustainable and resilient agricultural risk protection system.

# THREE REFORMS, ONE FUTURE

## HOW BUDGET 2026 CAN RESET INDIAN AGRICULTURE



India's agriculture, contributing 18% to GDP, employing 46% of the workforce, and sustaining 140 crore citizens stands at a pivotal juncture. Structural inefficiencies, including over Rs 1.5 lakh crore in annual post-harvest losses, climate volatility, and recurring price collapses that disproportionately affect smallholders, continue to constrain both farm incomes and food-system resilience.

Yet agriculture is also central to India's macroeconomic ambition: if the country is to realise its vision of becoming a US\$5 trillion economy, the sector must expand in both productivity and value, raising its contribution from 18% toward 26% of GDP.

As Finance Minister Nirmala Sitharaman presents the Union Budget on February 1, 2026, the moment calls not for incremental adjustments but for a calibrated, market-oriented reform agenda, one that raises farmer incomes, strengthens food security, and positions Indian agriculture for sustained competitiveness through governance, digitisation, and targeted fiscal design.

### **Digital Mandis: Transforming Cess into growth engine**

Budget 2026 offers a unique opportunity to align farmer prosperity, fiscal efficiency, and consumer welfare through a unified digital market. By proposing a 25% reduc-

About the **AUTHOR**

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tion in State mandis for verified digital transactions, the Budget can accelerate this structural shift by placing farmers first while strengthening governance and benefiting end-users.

The proposed 25% level is deliberately calibrated as a low-risk pilot to preserve state revenues. States can scale this in phases, potentially up to a full access waiver for digital transactions ensuring that reform remains data led.

For Farmers, digitised market platforms provide end-to-end transaction visibility while strengthening trust, improve bargaining power, and reduce anti-competitive practices. Nationwide digital price discovery broadens market access, drives competitive bidding, and delivers higher, timely and more consistent farmer realisations.

Formal digital trails enhance compliance and improve market oversight for the Government. Greater digital throughput supports market integration and lowers the need for ad-hoc interventions while strengthening tax buoyancy.

While farmer income remains the primary objective, these efficiencies also tighten wholesale-to-retail spreads, and improve supply reliability, contributing to fairer, more stable pricing for end-consumer outcomes.

Collectively, this measure positions digitisation as a scalable, evidence-based instrument for market reform in Budget 2026.

### **Rs 1.5 Lakh Crore Lost Annually: Enabling MSP for Fruits and Vegetables**

India discards over Rs 1.5 lakh crore worth of agricultural produce each year, including large volumes of fruits and vegetables. The Budget 2026 offers an opportunity to address this structural inefficiency by extending price support mechanisms to perishables through a more flexible, State-led framework.

The Budget should empower States with greater operational freedom to implement Price Deficiency Payment Schemes (PDPS) and expand the Market Intervention Scheme (MIS) to systematically cover fruits and vegetables under an MSP-linked architecture. A calibrated

### **A Coherent Agenda for Budget 2026**

Together, these three measures form a coherent, fiscally prudent roadmap for agricultural renewal in Budget 2026, but their impact depends on being digitally led. Incentivising digital mandi transactions institutionalises transparent price discovery, real-time settlements, and scalable market governance. Extending PDPS and MIS to perishables, anchored in verified digital trades and direct benefit transfers, ensures that price support reaches the right farmers without leakage or distortion. Expanding KCC subvention limits, integrated with data-driven credit tracking, can channel liquidity toward productive farm investment rather than informal borrowing.



MSP backstop, delivered through direct price deficiency payments or targeted procurement under MIS, would stabilise farm incomes without distorting markets or creating storage pressures.

Assured price floors would reduce distress sales, improve bargaining power, and encourage crop diversification for the farmers. With aggregation through FPOs and cooperatives, smallholders gain scale and market access while retaining production flexibility.

Predictable price support will catalyse private investment in cold chains, logistics, and processing, generating rural employment and strengthening agri-MSMEs. Downstream efficiencies tighten wholesale-retail spreads, improving price stability and quality for consumers.

A phased, evidence-based rollout, beginning with key horticulture crops and anchored in direct payments and market-based interventions, can transform surplus volatility into income stability, while positioning States as the primary implementers of a modern, perishable-inclusive MSP framework.

### **Reviving Rural Capital: Strengthening KCC as a Demand Engine**

Budget 2026 present an opportunity to

directly address the persistent capital constraint in the rural economy. The Kisan Credit Card (KCC) has been the principal channel for institutional credit to farmers, yet its limits have not kept pace with the cost realities of modern agriculture.

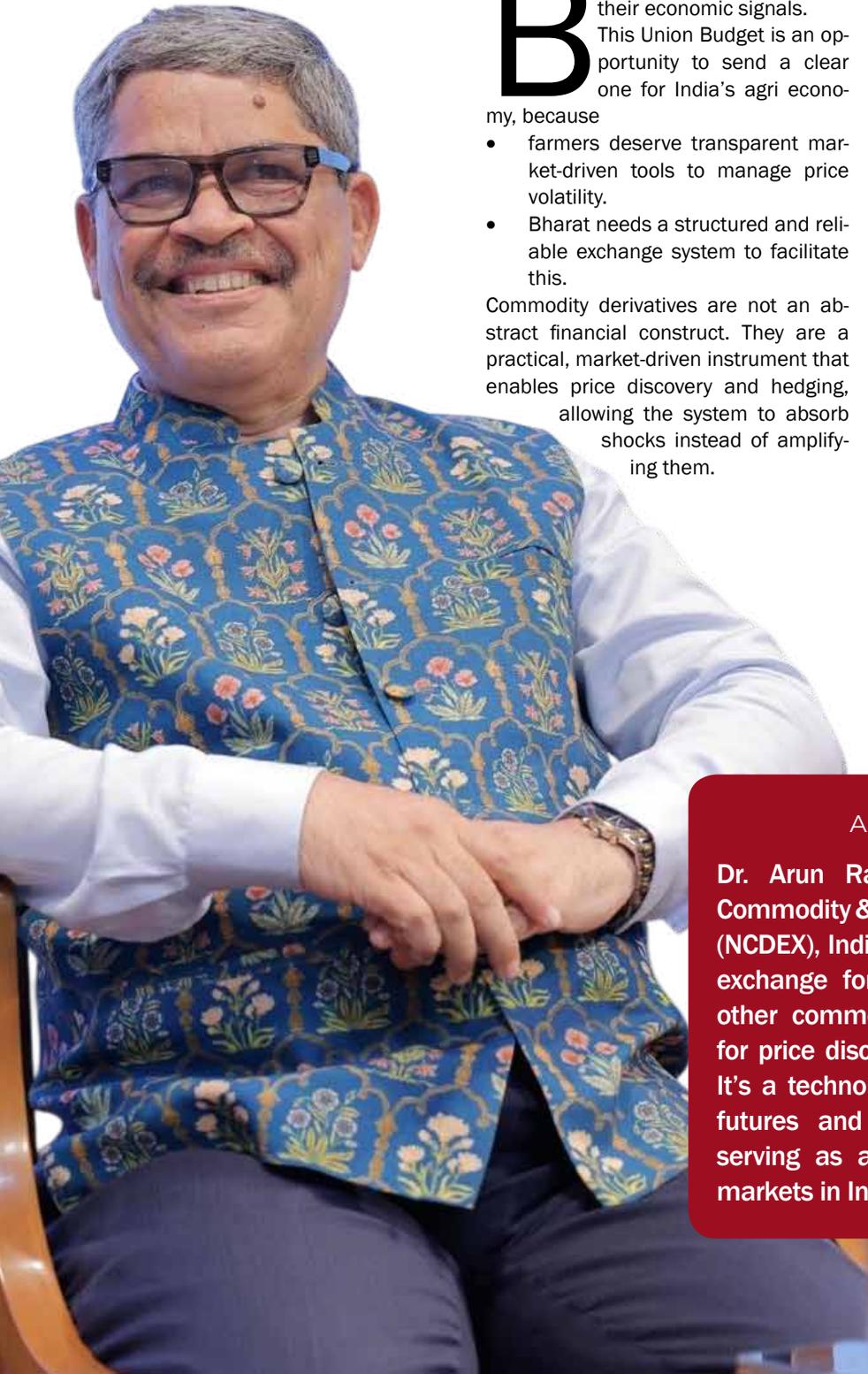
The Budget should therefore consider enhancing the KCC subvention limit from Rs 3 lakh to Rs 5 lakh. This calibrated adjustment reflects inflationary pressures and ensures that productive borrowing remains within the formal financial system. Without this revision, many farmers, particularly small farmers are compelled to bridge funding gaps through informal sources, often at prohibitive interest rates.

With agriculture exhibiting a high marginal propensity to spend, additional low-cost credit is rapidly deployed into seeds, equipment, services, and infrastructure, generating demand across manufacturing and rural services. Raising the KCC ceiling to Rs 5 lakh would inject significant incremental liquidity into the rural economy, functioning as a counter-cyclical demand stabiliser and supporting broader growth at a time of moderating urban consumption.

Digitisation is not an add-on; it is the system that enables scale, accountability, and evidence-based policymaking. End-to-end data, from farm gate to payment, allows precise targeting, outcome measurement, and continuous policy refinement. This aligns squarely with Indian agriculture's core agenda: raising smallholder incomes, strengthening market integrity, and converting public spending into measurable farm-level impact. Budget 2026 can thus move from fragmented interventions to an integrated, digitally enabled, market-led strategy for durable agricultural growth.

# BUILDING PRICE CONFIDENCE

## The Budget Signals India's Agri Markets Are Waiting



**B**udgets are landmarked for their economic signals. This Union Budget is an opportunity to send a clear one for India's agri economy, because

- farmers deserve transparent market-driven tools to manage price volatility.
- Bharat needs a structured and reliable exchange system to facilitate this.

Commodity derivatives are not an abstract financial construct. They are a practical, market-driven instrument that enables price discovery and hedging, allowing the system to absorb shocks instead of amplifying them.

### Need For Strengthening Commodity Markets

The case for strengthening commodity markets becomes even more compelling in the context of rising global headwinds. Geopolitical tensions, supply chain disruptions, climate-related shocks and conflicts across key commodity-producing regions have made global prices increasingly volatile. For India—an economy integrated with global agri and energy markets—such external shocks quickly transmit into domestic prices, impacting farmers, processors and consumers alike. Robust hedging mechanisms through commodity derivatives help absorb these shocks by allowing farmers to lock in prices and Indian corporates to hedge input costs and protect margins.

Globally, futures and options are widely used by agri and food companies as a first line of defence against geopolitical and supply-side volatility. Strengthening India's hedging ecosystem is therefore not merely a market reform, but a necessary safeguard for the farm economy against uncertainties beyond domestic control. Over the years,

#### About the **AUTHOR**

Dr. Arun Raste, MD & CEO, National Commodity & Derivatives Exchange Limited (NCDEX), India's leading online commodity exchange for trading in agricultural and other commodities, providing a platform for price discovery and risk management. It's a technology-driven exchange offering futures and options on various goods, serving as a benchmark for commodity markets in India

National Commodity & Derivatives Exchange (NCDEX) has demonstrated—through delivery-based contracts, farmer outreach and consistent value-chain engagement—that participation grows when frictions are removed. The forthcoming Budget can replicate this through a few decisive steps.

### Fixing the Tax Friction First

The biggest drag on commodity markets today is cost.

The Commodity Transaction Tax (CTT), though well-intended, has raised transaction costs for hedging. This dents the participation for agri participants. FPOs and value chain participants operate on thin margins. Every basis point matters.

A reduction—or removal—of CTT on agricultural and non-agricultural futures would immediately improve liquidity and revive genuine hedging activity. This must be supported by clearer GST treatment for commodity derivatives. Today, ambiguity around brokerage classification, cross-margining and tax pass-through adds to the complexity, which could have been avoided.

Parity with equity derivatives on GST would send a powerful signal: commodities are also prime markets.

The Budget should also encourage depth in priority value chains—pulses, oilseeds, cotton and horticulture. These are already central to India's food security and self-reliance agenda. Market instruments must match policy ambition.

### Bring Institutions into the Market

No mature commodity market runs on retail participation alone.

Globally, banks, insurers, pension funds and large corporate treasuries provide depth and stability by hedging real economic exposure. In India, regulatory constraints have kept this participation limited.

A clear Budget signal—backed by enabling changes across RBI, IRDAI and PFRDA frameworks—can unlock this potential. Institutional hedging improves spreads, price discovery and confidence.

NCDEX's publicly shared market experience shows this correlation clearly.

### VITAL INITIATIVES

Linking agri-credit schemes such as Kisan Credit Cards with formal hedging on recognised exchanges would be transformative. Allowing margin funding against sanctioned limits or WDRA-compliant warehouse receipts would integrate storage, finance and price risk management into one ecosystem. Targeted margin or transaction fee support for FPOs and cooperatives can accelerate adoption.

Technology must also be part of the conversation. Calibrated permission for co-location and algorithmic trading in metals and energy can deepen liquidity. For agriculture, a cautious and clearly articulated policy stance can balance liquidity needs with inflation sensitivities.

### Linking Credit with Hedging

For farmers and FPOs, the challenge is not intent. It is access.

Credit and risk management operate in silos. The Budget can change this.

NCDEX's farmer training and FPO engagement programmes consistently show that once entry barriers fall, participation follows.

### Investing Where Markets Meet Infrastructure

Markets need physical credibility. Warehouses, assaying labs and electronic platforms are the backbone of delivery-based derivatives. While progress has been made, the Budget can scale it faster.

Higher capital outlay and viability gap funding for WDRA-notified warehouses, modern assaying facilities and platforms such as e-NAM—linked directly with exchange delivery systems—will strengthen trust in market outcomes.

A dedicated fund or credit-linked subsidy for terminal market-linked silos and cold chains, especially in the 100 low-productivity districts, would reduce distress sales and reward quality. NCDEX's delivery experience underlines how critical this infrastructure is.

### Making Cooperatives and FPOs Market-Ready

Recent Budgets have rightly placed cooperatives and FPOs at the centre of agri reforms. The next step is market empowerment.

Price risk management through exchanges should be explicitly recognised as an eligible activity for fiscal support and tax benefits. Capacity-building grants for FPOs and Primary Agricultural Credit Societies to use futures, options and warehouse receipt financing can create durable institutions, not dependent ones.

Experience shows that informed participation improves price realisation and income stability.

### Aligning Spot and Derivatives

Finally, Bharat must address fragmentation.

Spot and derivatives markets cannot function in isolation. Clear Centre-State alignment on agri spot regulation, and a push for electronic, warehouse-based spot platforms, will allow both markets to operate as a single risk management stack.

This convergence reduces basis risk. It strengthens price signals. And it restores confidence in derivatives as tools for hedging.

### A Budget That Looks Ahead

In a volatile global environment, resilient agri economies are built on strong markets. If this Union Budget fixes distortions and backs market-led risk management, it can give India's agri economy the resilience it needs in an uncertain world.

The signal now must come from the policy.

# ALL EYES ON THE BUDGET AS INDIAN AGRICULTURE GEARS FOR NEW LEAPS



A quick recap of last year's budget for agriculture and farmer's welfare is required to understand the expectations by the agri-tech industry for this year. The generous budget allocation of Rs 1, 22,528.77 crore in 2024-25, for farmer welfare through schemes like PM-KISAN, electronic National Agriculture Market (eNAM) and the sanction from Agricultural Infrastructure Fund (AIF) for over 87,500 projects, was a beacon of optimism that we now hope will shine on the post-harvest management and supply chain segment, as we edge closer to the budget announcement.

## What can be pivotal in the budget for the agri-tech industry?

The necessity to invest in integrating technology for identifying and solving hindrances in the agricultural value chain, is now more than ever. Making eNWRs

mandatory for the creation of a robust ecosystem that allows digital tracking and subsequent transparency in pledging can be the real turning point.

State Governments use their powers under the Agricultural Produce and Livestock Marketing (APLM) Act to declare warehouses as "Deemed Market Yards" as suggested by Siraj Hussain Expert Committee Report.

- **Legal Designation:** State Governments should use the APLM Act to declare warehouses as "Deemed Market Yards," removing the legal monopoly of physical Mandis.

- **Regulatory Framework:** States are encouraged to adopt the Model APLM Act, 2017, and implement a "Single Unified Trading License" to allow traders to operate across various locations without separate licenses.

- **Eligibility & Standards:** All warehouses meeting basic infrastructure norms are eligible, with a strong prefer-

## About the **AUTHOR**

Mr Saurabh Khanna is MD & CEO, National e-Repository Limited. With more than 28 years of experience, Mr Khanna has held important roles in the finance and agriculture sectors. He brings immense insights to the table, especially on the subjects of agri-tech integration, Priority Sector Lending and developing the fintech segment for the agriculture domain

ence for WDR-registered facilities to ensure quality via electronic Negotiable Warehouse Receipts (eNWRs).

- **Operational Requirements:** Warehouses must provide integrated services, including on-site assaying and grading, e-trading infrastructure for platforms like e-NAM, and logistics support (cleaning and packaging).

- **Taxation & Fees:** To avoid double taxation, the committee recommends a single-point market fee and the elimination of local APMC fees or user charges when trading at a warehouse.

- **Implementation:** The Department of Agriculture and Farmers' Welfare (DoA&FW) should form a Steering Committee to monitor state progress and provide a uniform notification template.

### Granting special status to WDR warehouses by removing the EC Act, as was the case in 2018

It is proposed to exempt the stock limit from the commodities that are stored in WDR-registered warehouses in consultation with MoCA, to encourage large depositors and increase transparency with respect to stocking of commodities.

### Farmer and FPO's with enhanced benefits under WDR can be a Game Changer

#### Investing in Raising Farmer Capabilities

Creating awareness amongst farmers and extending facilities to help them adopt modern agricultural practices and new technologies is an important investment, especially with digital platforms gaining momentum. This also includes empowering Farmer Producer Organizations (FPOs) through market-linked strategies and credit guarantees.

#### Support from NABARD for value-addition at ground level

Involving NABARD at the grassroots level to publicize post-harvest finance through FPOs and creating a separate credit line at lower interest rates for commercial banks, will ensure proper utilization of fund for post-harvest infrastructure.

#### Implementing rental reimbursement for farmers



To make eNWR-based financing more lucrative for lenders, the guarantee fee structure for eNWR loans can either be on the same lines or at a flat rate. This would encourage participation, and ensure that eNWR-based credit remains competitive vis-à-vis collateral managers operating in the post-harvest financing space

In order to do away with the reluctance of choosing WDR approved warehouses, implementing rental reimbursement and interest subvention for all farmers is required. This was also recommended by the DMI under the Ministry of Agriculture last year but is yet to be implemented.

#### Prompt Repayment Incentive for Post-Harvest Finance

The Prompt Repayment Incentive (currently available under the KCC for pre-harvest loans) of 3% must be extended to post-harvest pledge loans against eNWRs.

#### Amending the acts of the WDR and RBI

To establish electronic Negotiable Warehouse Receipts (eNWRs) as a mainstream, secure and transparent financial instrument, a structured policy intervention led by the RBI is imperative. Despite the operationalisation of the WDR-reg-

ulated eNWR system, banks continue to predominantly rely on paper-based warehouse receipts (PWRs), which carry higher risks of fraud, duplication, and inefficiency.

It is proposed that RBI, in consultation with the WDR and NABARD, formulate a five-year transition and transformation plan to progressively shift banks from PWR-based lending to eNWR-backed financing. The proposed roadmap may include:

- **Phased Migration:** Initiate voluntary adoption of eNWRs in the first phase, followed by gradual restriction of PWR-based lending, leading to full transition to eNWRs by the end of the five-year period.

- **Incentive Mechanisms:** Encourage banks to offer differential interest rates in favour of eNWR-backed financing, provide higher PSL weightage and limits for eNWR-linked credit.

- **Regulatory Capital Benefits:** Consider reduced risk weights for loans se-



cured by eNWRs, given their traceability and reduced risk.

### Establishing a separate target for eNWRs under PSL guidelines

A distinct PSL sub-target within the agricultural lending category for credit extended against eNWRs. This would function similarly to the existing sub-targets for small and marginal farmers, ensuring that banks actively facilitate post-harvest credit and recognize eNWR-based financing as a strategic credit channel.

Furthermore, we recommend that the RBI monitor the quantum of eNWR-backed financing and publish this data as a specific sub-heading within PSL reporting. Distinguishing this from general agricultural credit will provide necessary transparency and track the growth of post-harvest funding.

### Promoting WDRA to be Part of Digital Financial Services

The concept of Trade Receivables Discounting System (TReDS), an RBI-regulated electronic platform in India that helps MSMEs get early payments for their invoices from large corporate buyers, can be also be adopted for financing of eNWRs. Digital pledging, application of discounts or trading of assets can happen online wherein banks/NFCs/Fintechs can also bid for lending against eNWRs. The borrower can either repay the loan and get the commodity released or sell it while the buyer makes the payment to the financial

**More Primary Agricultural Credit Societies (PACS) warehouses or private warehouses closer to the farm will help reduce post-harvest losses, lower transportation costs, enhance market access, and improve financial stability**



institution directly.

### Making eNWR a Tradable Instrument

In order to promote eNWR trade at a large scale through eNAM and other registered e-trading platforms, both primary and secondary trade should be encouraged. To create a clear distinction and enhance the utility of eNWR, it is essential to enable and promote its tradability. Making eNWR a tradable instrument will assist farmers in better price realization for their produce and expand its presence in broader markets, while bridging the gap between primary (eNAM) and tertiary (Future Exchange) market. This will subsequently strengthen the post-harvest management infrastructure.

### Lowering the Premium in Credit Guarantee Scheme

The current guarantee fee under the Credit Guarantee Scheme for loans against eNWRs ranges between 0.4% and 1%, for farmers and non-farmers respectively. In comparison, the guarantee fee under the Credit Guarantee Fund for Micro Units (CGFMU), is only 0.25% in the first year and 0.5% in subsequent years. To make eNWR-based financing more lucrative for lenders, the guarantee fee structure for eNWR loans can either be on the same lines or at a flat rate. This would encourage participation and ensure that eNWR-based credit remains competitive vis-à-vis collateral managers operating in the post-harvest financing space.

The following initiatives may also be considered.

### Investing in establishment of more warehouses at the farm gate

More Primary Agricultural Credit Societies (PACS) warehouses or private warehouses closer to the farm will help reduce post-harvest losses, lower transportation costs, enhance market access, and improve financial stability.

In our view the measure suggested above will make a path for robust and technology enabled warehousing ecosystem that will make difference in the livelihood of farmers leading to vision of VIKSIT Bharat 2030 of the Honourable Prime Minister.

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# INDIA-EU FREE TRADE AGREEMENT

## WHY THIS “MOTHER OF ALL TRADE DEALS” MATTERS FOR AGRICULTURE AND FARMERS

**T**he India-European Union Free Trade Agreement, often described by leaders as the “mother of all trade deals,” represents one of the most significant milestones in India’s economic engagement with the world. Announced at the 16th India-EU Summit in New Delhi, this historic

agreement concludes years of negotiations and lays the foundation for a deep and balanced economic partnership between India, the world’s fourth-largest economy, and the European Union, the world’s second-largest economic bloc. Official government statements confirm that over 99 percent of Indian exports by value will gain preferential access to the EU market, offering unprecedented opportunities for Indian products across sectors including agriculture, horticulture, tree-based and processed foods. For Bharat’s agriculture sector, this trade agreement is far more than a conventional export deal. It opens new pathways for quality-driven growth, export competitiveness, and systemic transformation towards economically and ecologically viable global food systems.

### Benefits for Bharat Agriculture and Farmers

A central promise of the India-EU FTA is expanded and more predictable market access for Indian agricultural sectors will benefit from enhanced competitiveness in the European market, with improved entry opportunities for key commodities such as tea, coffee, spices, fresh as well dried fruits and vegetables, specialty and other processed products, and region-specific agricultural goods aligns with India’s strengths in agrobiodiversity and traditional food sectors. This preferential market access is expected to strengthen farmers’ price realisation and support rural

#### About the **AUTHOR**

**Dr. Chandrashekhar M. Biradar, Founder of Global Green Growth, is an Earth System Scientist with over three decades of experience across the Indian subcontinent, Asia, Eurasia, the Middle East, Africa, and the Americas, working at the intersection of integrated farming systems, agroecology, biodiversity, tree-based landscapes, drylands, living labs-land management.**

livelihoods. Meeting quality and sanitary standards, FTA can significantly elevate demand, helping producers and agribusinesses secure long-term markets for high-value and certified goods.

A critical element of the agreement is the protection of sensitive 'year-around' agricultural sectors. The pact ensures that essential segments such as dairy, millets, certain fruits and vegetables, etc are safeguarded from sudden tariff exposure. This careful calibration reflects India's policy priorities to support food security and protect small and marginal farming communities, while still enabling export opportunities in areas where Indian producers have competitive advantages. The inclusion of balanced Product Specific Rules (PSRs) designed to align with existing supply chains. These rules help determine which products qualify for preferential tariff treatment, while also providing flexibility for MSMEs by allowing self-certification through a Statement on Origin. This provision is aimed at simplifying compliance, reducing export costs, and enabling smaller enterprises to participate more effectively in international trade.

The agreement also positions labour-intensive and export-oriented agri-products to gain from reduced tariffs, enabling India's farmers and processors to compete more effectively on quality, traceability, and certification. The potential increase in export revenue estimated worth over Rs 6.4 lakh crore (USD 75 billion) could be unlocked under the new arrangement.

### Agroecology and Tree-Based Food Systems as a Strategic Opportunity

Beyond traditional export gains, the India-EU FTA aligns with global market trends that increasingly favour sustainable, eco-friendly, and traceable agricultural systems. One of the strongest emerging opportunities is for agroecological and tree-based food systems emphasises practices that enhance soil health, conserve water, protect biodiversity, and reduce dependency on synthetic inputs. European consumers and regulators place a high pre-

### The Big Picture

The India-EU Free Trade Agreement is more than a conventional trade deal. It represents a strategic partnership that connects farmers, science, markets, and nature. With careful implementation and focus on sustainable agriculture, this agreement offers India a historic opportunity to become a global leader in agroecology, tree-based food systems, and climate-smart agriculture, while making Indian agriculture more competitive, resilient, and farmer-centric in the years ahead.

mium on these attributes, particularly in green growth markets for organic produce, speciality foods, and sustainably certified products. Indian farmers practising natural farming or agroecological methods are likely to find strong interest and demand in the EU, provided they meet required certification and traceability standards.

Tree-based food systems, including fruits, nuts, spices, oils, coffee and cocoa, etc align well with the agreement's market access priorities. These perennial and bio-diversified systems provide stable incomes, year-round production cycles, and improved resilience to climate variability. Such systems are particularly suited to smallholder and rainfed agricultural landscapes that characterise much of Bharat's countryside. They also contribute to landscape restoration, carbon sequestration, and broader ecological resilience, aligning agricultural growth with environmental stewardship. By enabling preferential access for sustainably produced and value-added agricultural goods, the FTA indirectly supports India's transition towards diversified, climate-smart, and eco-sensitive farming systems. This strategic alignment can help place Indian farmers at the forefront of emerging global demand for sustainable food.

### Overall Development Benefits

The India-EU Free Trade Agreement strengthens India's position in the global trading system, linking two of the world's largest economic blocs emphasise that the agreement will also deepen cooperation in services, mobility, digital trade, and supply chain integration.

For Indian agriculture, the deal opens doors not just to markets but to innovation, investment, and technology transfer. Improved access to advanced

machinery, processing technologies, food safety systems, and digital tools will support the modernisation of Indian agriculture. Investments in rural infrastructure, cold and dry chains, grading and packaging facilities, and quality testing labs will reduce post-harvest losses and improve market readiness. Also emphasis on ease of doing business and regulatory cooperation will reduce compliance costs and enhance competitiveness. This is especially important for small and medium enterprises (MSMEs), farmer producer organisations, and agrienterprises seeking global reach.

### Way Forward for Policy and Practice

To fully capture the benefits of this landmark deal, India must take a proactive and structured approach. Strengthening FPOs and cooperatives will be essential to aggregate produce, meet quality standards, and negotiate favourable terms in global markets. Capacity building on EU regulatory standards, traceability, quality certification, and export procedures will be critical for farmers and agribusinesses. Promoting value addition close to farm gates will help retain a larger share of export earnings in rural areas. Mainstreaming tree-based and diversified farming systems into export strategies will support both economic and ecological goals. Integrating digital traceability, geospatial monitoring, and data-driven quality systems will enhance transparency and market confidence. Financial support mechanisms, risk mitigation tools, and transition incentives will ensure smallholders are included in the export ecosystem. These supports will be essential to help farmers navigate the initial cost and complexity of meeting international standards.

# FCV TOBACCO FARMERS DEMAND REVIEW OF TOBACCO TAX HIKE



A delegation of FCV tobacco farmers from Andhra Pradesh, Telangana and Karnataka, led by Smt. Daggubati Purandeswari, Member of Parliament from Rajahmundry, along with Shri Yashwanth Kumar Chidipothu, Chairman, Tobacco Board, met Smt. Nirjala Sitharaman, Union Finance Minister, this afternoon to express serious concerns over the recent tax hike and its likely adverse impact on the regulated

FCV tobacco ecosystem and farmers' livelihoods.

MP Smt. Purandeswari initiated the discussion and explained that the sudden increase in taxation would create severe distress for lakhs of farming families dependent on FCV tobacco cultivation and disrupt the regulated marketing system. She highlighted the possible revenue loss to the Government due to decline in legal trade, and the serious risk of illicit trade expansion, which could un-

dermine national revenue as well as enforcement efforts. She also emphasized the need to protect domestic industry by ensuring stable availability and usage of low-grade tobacco, which is crucial for sustaining farmer incomes, auction stability and overall demand.

## Repercussions Of Tax Hike

Shri Yashwanth Kumar Chidipothu, Chairman, Tobacco Board, explained in detail the repercussions of the tax hike



on auctions, buyer participation, trade confidence, and the overall functioning of the regulated FCV tobacco. He further emphasised that although the tax hike is being projected as a “revenue-neutral” measure, it has come as a major policy shock to farmers and the regulated sector, as the notified rates, effective from 1st February, will sharply increase the tax incidence on legal cigarettes by around 73%, making it 2 to 3 times higher, and thereby adding severe pressure on legal demand and the auction-based FCV ecosystem.

He cautioned that weakened buyer participation could directly affect auction competitiveness, resulting in lower prices and higher unsold stocks, ultimately impacting farmer livelihoods and the entire value chain.

### Challenges Faced by Farmers

During the meeting, farmers from Andhra Pradesh and Telangana informed that the crop is ready, and auctions are expected to commence from next month. They expressed deep concern that the tax hike may drastically reduce domestic consumption, leading to sharp price declines, accumulation of unsold stocks, and reduced buying interest from traders. They also warned that sudden tax shocks historically encourage illegal and smuggled products and cited the example of South Africa where legal factories reportedly shut down as illicit trade expanded to nearly

**Farmers from Andhra Pradesh and Telangana informed that the crop is ready, and auctions are expected to commence from next month. They expressed deep concern that the tax hike may drastically reduce domestic consumption, leading to sharp price declines, accumulation of unsold stocks, and reduced buying interest from traders. They also warned that sudden tax shocks historically encourage illegal and smuggled products and cited the example of South Africa where legal factories reportedly shut down as illicit trade expanded to nearly 75% of the market**

75% of the market.

Farmers from Karnataka explained that auction prices have already declined by nearly 10% and they have received information that from 1st February onwards, traders may not participate due to the 18% tax on unmanufactured tobacco. They cautioned that if buyer participation reduces further, the auction system will be severely affected, and farmers will face heavy losses.

Finance Minister Smt. Nirmala Sitharaman listened carefully to all concerns and responded positively, assuring that the Government will look into the is-

sues, review the concerns, and consider the points raised by the farmers and stakeholders. She also assured that the Government’s approach will be revenue-neutral, while taking into account the impact on farmers, trade and the regulated ecosystem, and further stated that the Government is not looking to generate additional revenue from the tobacco sector.

MP Smt. D. Purandeswari further assured the delegation that she would take up these matters at the appropriate forums and follow up closely with the Government.

# POLICY THRUSTS IN THE UNION BUDGET TO STRENGTHEN INDIA'S AGRICULTURE SECTOR



**A**griculture continues to be the backbone of the Indian economy, supporting livelihoods for nearly half the population and playing a critical role in food security, rural employment, and economic stability. However, the sector today stands at a crossroads. Climate variability, fragmented landholdings, rising input costs, and uneven access to technology have exposed structural weaknesses that cannot be addressed through incremental measures alone. The Union Budget, therefore, must go beyond traditional allocations and artic-

ulate clear policy thrusts that modernise agriculture, enhance competitiveness, and unlock private sector participation in a regulated and credible manner.

## Driving Productivity Through Technology and Institutional Reform

Improving productivity remains a central challenge for Indian agriculture. While scientific capability exists, its translation into field-level impact has been uneven. The Union Budget must prioritise not only technology adoption but also institutional

### About the **AUTHOR**

Mr Gubba Kiran, CEO of Gubba Cold Storage, has been at the forefront of driving excellence in cold storage preservation across India. Under his visionary leadership, Gubba has grown from a modest 0.7 million to an impressive 15 million cubic feet, establishing itself as one of the largest cold storage companies in the country. Recognized as the face of Gubba in the Indian seed industry, Kiran ji has also played a pivotal role in raising awareness among pharmaceutical companies about the importance of safeguarding sensitive products through proper cold storage. In his mission to support and strengthen the Indian seed industry, he spearheaded the launch of several pioneering initiatives—including Gubba Biotech Lab. He also introduced India's first Multi-Location Trials (MLT) for seeds and established the country's first private Seed Germplasm Bank, setting new benchmarks in innovation and quality within the sector.

reform that enables faster testing, validation, and deployment of innovations. Digital agriculture platforms, precision farming tools, and data-driven advisory systems can significantly improve efficiency, but their success depends on robust testing and certification frameworks. Budgetary support should therefore focus on strengthening the ecosystem that links research, testing, validation, and adoption.

### Recognising Private Laboratories as National Assets

A critical policy reform area that requires urgent attention is the formal recognition of private agricultural laboratories. India has a strong network of private biotechnology labs, seed testing laboratories, and germination testing facilities that operate with high technical competence and global standards. Yet, many of these labs remain outside the formal government recognition framework, limiting their ability to contribute fully to national agricultural objectives.

The Union Budget should clearly articulate a policy thrust that enables government recognition and accreditation of private biotechnology and seed germination laboratories. Recognised private labs can significantly expand national testing capacity, reduce bottlenecks, improve turnaround times, and enhance the credibility of quality certification. This is particularly important as seed quality, varietal purity, and germination performance directly influence farm productivity and farmer trust. Recognising private labs does not dilute regulatory oversight; instead, it strengthens the system through capacity augmentation and competition-driven efficiency.

### Opening Multi-Localational Trials to Third-Party Players

At present, multi-localational trials—essential for validating seed performance across agro-climatic zones—are largely conducted under public institutions, primarily through ICAR. While public research remains vital, the growing complexity of agriculture demands broader participation. The Union Budget should promote a policy shift that allows third-party private players, including accredited private laboratories and research organisations, to conduct multi-

## STRUCTURAL REFORMS NEEDED

Strengthening Indian agriculture requires structural reforms that extend beyond subsidies and short-term relief. Recognising private biotechnology and seed testing laboratories, and opening multi-localational trials to accredited third-party players, represents a critical policy shift that can accelerate innovation, improve quality assurance, and enhance farmer confidence. When combined with investments in infrastructure, market access, climate resilience, and institutional capacity, these reforms can transform agriculture into a modern, competitive, and resilient sector. The Union Budget has a unique opportunity to catalyse this transition by embracing inclusive, forward-looking policy thrusts that unlock the full potential of India's agricultural ecosystem.

localational trials under clearly defined regulatory protocols.

Such a move would accelerate varietal evaluation, improve data robustness, and reduce time-to-market for improved seeds. Allowing private participation in trials, under government supervision and transparent guidelines, would also encourage innovation, attract investment into seed research, and align India's testing ecosystem with global best practices. Importantly, this reform would not replace public institutions but complement them, creating a collaborative research environment.

### Strengthening Infrastructure and Quality Assurance Systems

Infrastructure remains a key constraint across the agricultural value chain. The Union Budget must continue to support cold storage, warehousing, and post-harvest infrastructure, but equal emphasis must be placed on quality assurance infrastructure. Laboratories, testing facilities, and certification systems are as critical as physical storage in ensuring value preservation. Expanding funding windows under existing schemes to include lab infrastructure, calibration systems, and skilled manpower development will strengthen trust across domestic and export markets.

### Market Access, Seed Quality, and Farmer Confidence

Reliable testing and certification directly impact market confidence. Farmers depend on quality seeds for yield stability,

while domestic and international buyers rely on certified standards. By recognising private labs and expanding trial frameworks, the government can create a more responsive and credible quality ecosystem. This will improve price realisation, reduce disputes, and support India's ambitions in seed exports and agricultural trade.

### Risk Management and Climate Preparedness

Climate volatility has increased production risks, making resilient seeds and accurate testing more important than ever. Budgetary focus on climate-resilient varieties must be matched with robust testing mechanisms across regions. Accredited private labs conducting germination, vigour, and stress-response tests can significantly strengthen climate preparedness. Integrating such labs into national risk management and crop insurance frameworks will also improve loss assessment accuracy.

### Building a Collaborative Public-Private Ecosystem

The future of Indian agriculture depends on collaboration rather than compartmentalisation. The Union Budget should signal a clear intent to build public-private partnerships in research, testing, and validation, backed by transparent accreditation systems and accountability mechanisms. Private sector participation, when regulated and recognised, can amplify public investment outcomes and reduce pressure on government institutions.

# BUILDING A UNIFIED, OUTCOME-DRIVEN ARCHITECTURE FOR INDIAN AGRICULTURE



**A**s India approaches Union Budget 2026, agriculture stands at a defining crossroads. The sector contributes approximately [17.8%] to national GDP and provides livelihoods to over [46.1%] of the workforce, yet it continues to face deep-rooted structural inefficiencies. Persistent challenges such as low farm productivity, inefficient water use, fragmented landholdings, and limited market integration have constrained growth despite decades of policy interventions.

Incremental schemes and short-term relief measures have reached their limits. What Indian agriculture now requires is architecture-level reform, a unified, results-driven framework that aligns productivity, sustainability, farmer incomes,

and global competitiveness. Budget 2026 presents a critical opportunity to initiate this transformation.

## Redesigning Subsidies: From Consumption to Outcomes

India's agricultural subsidy system, long designed to boost access, has unintentionally begun to reward excess. Subsidies on fertilisers, electricity, and irrigation have driven input-intensive farming practices that strain soils, deplete groundwater, reduce produce quality, and inflate costs, often without delivering proportional gains in productivity or farmer income. What began as support has, in many cases, become a structural inefficiency.

Budget 2026 offers a timely opportunity to correct this course by moving from consumption-led subsidies to efficiency-driven incentives. A phased transition toward Package of Practice (PoP)-linked support can realign public spending with measurable outcomes such as higher yields, improved soil health, and optimal water use. Incentives tied to performance encourage farmers to adopt scientifically sound practices rather than maximise input usage.

Performance-based support has the dual advantage of conserving critical resources while directly improving farm profitability. Mechanisation subsidies, in particular, should be routed through Direct Benefit Transfer (DBT) and restricted to FMTTI or BIS-approved equipment, do away with state-wise, department-wise, schemewise product approval processes, but retain the state government's role in selecting beneficiaries, ensuring that public funds translate into reliable, high-impact technology on the ground.

### About the **AUTHOR**

**Mr Ravindra Agrawal, Chairman, KisanKraft Ltd, a Bengaluru-based leading Indian agricultural machinery manufacturer and distributor specializing in affordable equipment for small and marginal farmers (under 5 acres)**

Such targeting not only improves outcomes but also reduces leakages and enhances accountability across the subsidy ecosystem.

### **Integrated Water–Soil–Climate Management**

The future of Indian agriculture will be determined not by how much it produces, but by how intelligently it manages its natural resources. Water, soil, seeds, and climate resilience are deeply interconnected, yet policy interventions in these areas have traditionally been designed and implemented in isolation. This fragmented approach has limited impact at a time when resource stress and climate uncertainty are intensifying.

Budget 2026 must break these silos by adopting a mission-mode, systems-based approach to water–soil–climate management. At the core of this shift should be accelerated investment in next-generation seeds, varieties engineered to deliver higher yields with lower water consumption, reduced nutrient dependence, and minimal chemical inputs. Equally important is the scientific package of practices, and promotion of diversified crop rotations, which play a critical role in restoring soil organic matter, improving nutrient balance, and reducing the risks associated with monocropping. Additionally, the government must allow agri-businesses to set up Model Farms to showcase and prove the efficacy of new seeds, machinery, and packages of practices to the farmers.

When aligned under a single framework, these interventions can deliver compounding benefits: healthier soils, sustained groundwater levels, better quality produce, and farms better equipped to withstand climate volatility. An integrated resource strategy is not just an environmental imperative, it is essential to securing long-term productivity and farmer livelihoods in a climate-constrained future.

### **Technology-Enabled Supply Chains and Market Access**

Post-harvest losses remain one of the biggest silent drains on farmer incomes and national food security. A significant share



### **Digitised Land Records: A Foundational Reform**

No agricultural transformation can succeed without addressing land ownership clarity. Universal, digitised land records with legally enforceable titles are essential for unlocking the sector's potential.

Clear land titles enable farmers to access affordable institutional credit, undertake long-term investments, and participate more effectively in modern value chains. They also enable data-driven policymaking, accurate beneficiary targeting, and transparent subsidy delivery.

Without comprehensive land digitisation, farmers remain dependent on informal finance, land values remain suppressed, and the impact of other budgetary interventions is significantly diluted. Budget 2026 should set clear timelines and accountability mechanisms for nationwide land record reform.

A corollary of this digitisation is the data collection for each stage of crop from land-preparation, sowing, pest & disease management to harvesting; and then sharing this data at suitable granularity with stakeholders for planning their support or intervention.

of agricultural produce is lost each year due to inadequate storage, inefficient logistics, and the absence of standardised grading. Farmers or the nation cannot afford these losses and it can be fixed by policy changes.

Budget 2026 should accelerate investments in technology-enabled supply chains, spanning purity of seeds and then produce at farm, standardised grading, packaging, modern storage, traceability systems, and integrated logistics. These interventions can sharply reduce wastage, improve farmgate price realisation, and unlock higher value for farmers. Stronger supply chains will also enhance India's export readiness by ensuring consistent quality and compliance with global standards.

### **Policy Stability for Global Competitiveness**

In global markets, consistency is as important as quality. Frequent shifts in policies, whether on residue norms, exports, or certification, undermine credibility and

discourage long-term investment. Budget 2026 must signal a clear commitment to stable, multi-year policy frameworks, enabling producers, supply chain intermediaries, and exporters to plan confidently, adopt technology, and integrate seamlessly into global value chains.

### **Towards a Unified Reform Architecture**

The true measure of Budget 2026 will lie in its coherence. Subsidy reform, natural resource management, land digitisation, supply chain modernisation, and global market alignment must operate as interconnected levers, not standalone initiatives. If executed in unison, these reforms can stabilise farm incomes, embed sustainability into everyday agricultural practice, and position India as a globally competitive food producer. Indian agriculture no longer needs incremental course corrections; it needs a decisive structural reset. Budget 2026 has the potential to deliver exactly that.



# COFFEE GROWERS

## HOPEFUL OF BUDGET BOOST TO ENABLE GLOBAL RISE

**A**s we approach the Union Budget 2026–27, India's coffee sector stands at an important crossroads. We are seeing strong global demand for coffee, record price cycles, and a renewed international appetite for responsibly grown origins. At the same time, growers across India are dealing with rising climate uncertainty, increasing costs of cultivation, labour constraints, and new compliance expectations in key export markets. The Budget therefore presents a timely opportunity to strengthen the foundations of coffee farming, protect the grower's economics, and elevate



India's position as a premium coffee origin on the global map.

India's coffee story is distinctive. Unlike many producing countries, Indian coffee is largely grown under shade in the biodiversity-rich landscapes of the Western and Eastern Ghats. This makes our coffee not only unique in cup character, but also inherently aligned with sustainability and ecological balance. Yet, as an industry, we have often under-marketed this advantage. We export significant volumes, but our "origin story" still does not

carry the same consistent recall in global consumer markets as it deserves. Budget 2026 should therefore be viewed not merely as an allocation exercise, but as a national opportunity to strengthen the coffee value chain from farm resilience and productivity to branding, market access, and value-added exports.

### **Weather Volatility**

From a grower's standpoint, the most immediate need is climate resilience. Weather volatility is no longer an excep-



### About the **AUTHOR**

**Mr Rana George, Managing Director of Kelachandra Coffee, is making Indian specialty coffee globally recognized for its terroir, traceability and quality. Under his leadership, Kelachandra's Estates in the Western Ghats achieved Rainforest Alliance certification and strengthened alignment with EUDR requirements, while scaling restoration initiatives across a UNESCO-recognised biodiversity landscape. His afforestation programme has planted 5,000+ native trees, contributing to the group's longer-term Net Zero and carbon-sink goals**

tion; it is fast becoming the norm. Excessive rainfall events disrupt harvesting and drying, while prolonged dry spells affect flowering and yield. Pest and disease pressures also rise under shifting weather patterns. Growers need stronger support through improved crop advisory systems, better irrigation and water conservation structures, scientific soil and nutrient management, and region-specific climate adaptation programs. Importantly, this is not just about protecting yield rather about protecting livelihoods and long-term confidence to stay invested in coffee farming.

### Sustained Cost Inflation

Second, coffee growers are facing sustained cost inflation, especially in labour, inputs, and compliance. Plantation crops operate on multi-year cycles, and costs often rise faster than realizations can adjust, particularly for growers who are not fully integrated into value-added processing. The Budget could consider targeted relief measures such as interest subvention for plantation working capital, easier access to long-tenure credit for replantation and rejuvenation, and support for mechanisation where feasible. A modern and inclusive safety net through crop insurance tailored for plantation realities, covering weather events and quality damage, would also go a long way.

### Evolving Global Regulations

Third, India's coffee competitiveness must be protected in the context of evolving global regulations. The EU Deforestation Regulation (EUDR) and other sustainability-linked requirements are pushing the global coffee trade towards traceability, verifiable legal compliance, and proof of deforestation-free supply. This is the right direction for the planet, but the cost and complexity of compliance can be a heavy burden for fragmented supply chains and small growers unless we proactively create a national enablement framework. Budget 2026 could support a digital traceability backbone for coffee, built around farm-level mapping, documentation support, and practical verification systems, so compliance becomes a shared national capability rather than an individual grower's struggle. If India gets this right early, we

### Future-Ready Ecosystem

Coffee growers do not seek "short-term relief" alone. We seek a future-ready ecosystem where farming is economically viable, climate risks are managed scientifically, compliance becomes an opportunity rather than a threat, and Indian coffee earns rightful recognition in global markets. Budget 2026 can strengthen one of India's most distinctive agricultural exports.



coffee backed by consistent grading, storytelling, and origin identity. We should aspire to be known not only as a producing nation, but as a premium origin with distinctive regional profiles - Chikmagalur, Coorg, Wayanad, the Nilgiris - each with its own character, much like wine regions across the world.

can convert compliance into competitive advantage.

### Research and Development

Fourth, we must invest in research and varietal development with greater urgency. Productivity improvements in coffee cannot rely on expanding land area as our future depends on better yields, improved cup quality, and higher resilience per hectare. India has strong institutional capability, but research needs sharper prioritisation and faster translation to farm realities: climate-tolerant varieties, pest-resistant strains, agronomy suited to changing rainfall patterns, and best practices for shade management and soil regeneration. Supporting last-mile extension and training, especially for smallholders, will be critical for real impact.

### Strengthen Brand India in Coffee

Beyond the farm, the Budget must encourage value addition and Brand India in coffee. Today, a large share of our exports leaves the country as green beans. While this has its place, India will truly step up when we export more roasted coffee, specialty micro-lots, and differentiated

To enable this, we need better infrastructure across the post-harvest and export ecosystem: modern curing and warehousing, quality testing labs, easier access to specialty processing equipment, and efficient logistics that reduce time-to-ship. Incentives that support value-added exports without creating distortions can help more growers and exporters invest in roasting, packaging, and brand-led market entry. India also needs a stronger global outreach program that showcases Indian coffee at international platforms with consistent messaging, visibility, and participation support for serious players.

Finally, the domestic market deserves attention as well. Coffee consumption is rising in India, and café culture is expanding beyond metros. This offers an opportunity to build national pride around Indian origin coffee, strengthen farm-to-cup awareness, and create a demand base that rewards quality. Skill development for baristas, roasters, and sensory professionals, along with support for coffee tourism and origin experiences, can strengthen this ecosystem and build a stronger premium perception.

# UNION BUDGET 2026

## RE-ENGINEERING AGRICULTURE AND ALLIED SECTORS BEYOND INCREMENTALISM

For over a decade, successive Union Budgets have followed a broadly predictable template for agriculture and allied sectors. Allocations typically prioritise institutional credit to farmers, capital subsidies, irrigation and storage

infrastructure, minimum support prices (MSP), incremental increases in R&D outlays, support for agri-tech start-ups, commodity-specific missions (aquaculture, horticulture, apiculture, dairy, poultry, animal husbandry), and export promotion schemes. Union Budget 2025–26 was no exception: it focused on credit expansion, digital public infrastructure for agriculture, value-chain development, and targeted welfare schemes. While these interventions remain necessary, they are no longer sufficient.

Union Budget 2026 must move decisively from welfare-centric and scheme-driven incrementalism to structural, systems-level reform. The core challenge facing Indian agriculture today is not merely low productivity or inadequate finance, but a fragmented

agri-supply chain that fails to translate farm output into high-value, branded, export-competitive products. Addressing this requires institutional redesign, regulatory harmonisation, and market architecture reforms.

### Centre–State Dynamics: Policy–Execution Mismatch

Agriculture constitutionally remains a State subject. However, policy frameworks, funding envelopes, and flagship schemes are designed at the Centre and implemented by States. Schemes such as RKVY, PMFBY, PMKSY, and fisheries and horticulture missions illustrate this duality. The result is uneven implementation, variable outcomes, and limited accountability for value-chain performance.

Union Budget 2026 must explicitly

### About the AUTHOR

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recognise this mismatch and shift from scheme proliferation to outcome-linked architecture, where States are incentivised to deliver measurable improvements in farmer incomes, processing intensity, export value, and supply-chain efficiency.

## From Subsidies to Systems: What Budget 2026 Must Create

### 1. Agri-Commodity and Food-Tech Industrial Parks and SEZs

The most urgent reform is the creation of at least 25 national-scale agri-commodity and food-tech industrial parks and SEZs. These must be commodity-focused (grains, cotton, spices, fruits, marine products, dairy, poultry) and export-oriented. India's agri-supply chains are broken between farmgate, aggregation, processing, branding, and exports. Integrated parks with common infrastructure—quality labs, cold chains, packaging, logistics, and customs facilitation—can convert raw produce into high-value branded products. Without such hubs, MSP and subsidies only perpetuate low-value production.

### 2. National-Level Registration and Regulation of Agri-Inputs (Seeds)

Seed quality lies at the heart of productivity and resilience. India's fragmented, state-wise regulatory approach creates duplication, delays, and quality inconsistencies. Union Budget 2026 should support a national-level registration system for seeds, including open-pollinated varieties, hybrids, and advanced biotech products, backed by accredited genetic and physical purity testing labs. This would streamline innovation while protecting farmers from sub-standard inputs.

### 3. Quality-Linked Procurement for Cotton and Other Commodities

Procurement today largely ignores fibre length, strength, contamination, and traceability. For commodities like cotton, oilseeds, and pulses, procurement must shift from volume-based to quality-indexed models using modern testing and grading technologies. This would align domestic production with global textile and food-processing requirements and enhance export competitiveness.

## From Farmer Support to Agri-Enterprise Nation

Comparing past budgets with what lies ahead, the message is clear: India does not need more schemes; it needs stronger systems. Union Budget 2026 must retain support for credit, MSP, and welfare, but decisively pivot toward supply-chain integration, quality-driven markets, enterprise creation, and export-oriented agri-industrialisation. Only then can agriculture transition from a subsistence-support sector to a globally competitive agri-enterprise ecosystem—improving farmer incomes, national productivity, and India's position in global food and fibre markets.



### 4. Risk-Free Capital for Agri Graduates and Templated Start-ups

India produces thousands of agriculture graduates annually, yet few become entrepreneurs. Budget 2026 should create risk-free or quasi-equity capital windows for agri graduates to establish templated start-ups within food-processing clusters. These start-ups can operate aggregation centres, processing units, quality labs, and digital logistics platforms—bridging the gap between farms and markets.

### 5. Integrated Push for Poultry, Dairy, and Fisheries

India enjoys a natural competitive advantage in poultry, dairy, and fisheries, yet value addition remains limited. A strong institutional integration between the Ministry of Agriculture and Ministry of Food Processing Industries is essential. Budgetary design must move beyond production support to processing, branding, cold chains, and export market access in a unified framework.

### 6. Strengthening eNAM as a National Market Grid

The eNAM must evolve from a price discovery platform into a true national agri-market grid. This includes seamless inter-state trade, integrated logistics,

quality-based trading, forward contracts, and linkage with processors and exporters. Budget 2026 should fund technology upgrades and regulatory harmonisation to achieve this.

### 7. Comprehensive Revision of Agricultural Education

Agricultural curricula remain largely production-centric and detached from modern agri-business realities. Budget 2026 should support a comprehensive curriculum overhaul, mandating structured internships in food processing, agri-inputs, logistics, retail, and exports. Human capital alignment is critical for long-term competitiveness.

### 8. Logistics, Cold Chains, Warehousing, and Speed

Time is value in agriculture. Investments in speed—modern logistics, multi-modal transport, cold chains, and scientific warehousing—must be treated as core productivity infrastructure, not ancillary support. Budget 2026 should prioritise outcome-linked funding for these assets, especially near production and processing clusters.

### 9. An Aalsmeer-Type Exchange for India

India needs a transparent, electronic, high-volume exchange on the lines of the Aalsmeer Flower Auction. Such an exchange, initially for flowers, fruits, and perishables, would institutionalise quality standards, transparent auctions, and global buyer participation.

### 10. Vertical Farming and Hydroponics Mission

Urbanisation, water stress, and climate volatility demand new production models. A dedicated national scheme for vertical farming and hydroponics—linked to urban markets, hotels, and exports—should be introduced in Budget 2026, moving beyond pilots to commercial scale.

# Sustainable Sweet Revolution

## India Honey Alliance's Budget Wishlist

India's honey sector has emerged as a significant contributor to rural livelihoods and export growth through agricultural diversification. Anchored in the vision of the Sweet Revolution, the sector has benefited from structured policy intervention and institutional backing over the past decade. As the country approaches the Union Budget 2026–27, there is an opportunity to reinforce this progress while addressing gaps that continue to limit the flow of benefits to farmers and producers on the ground.

### PM's Thrust On Promotion of Beekeeping and Allied Activities

The conceptual foundation of the Sweet Revolution was articulated in 2016, when the Prime Minister called for the promotion of beekeeping and allied activities as part of the national objective to double farmers' income by 2024.

This vision recognised honey production as both a direct income source and an indirect driver of agricultural productivity through pollination. By placing bees at the centre of crop systems rather than treating beekeeping as a standalone activity, the Sweet Revolution positioned apiculture within the mainstream of agricultural development.

The PM's vision received formal structure in 2020 with the launch of the National Beekeeping and Honey Mission



under the Ministry of Agriculture and Farmers Welfare. An allocation of Rs.500 crore under the Atma Nirbhar Abhiyan provided the initial financial support to scale scientific beekeeping, strengthening value chains and allowing for capacity building. Over the last few fiscal years, budgetary support for beekeeping related activities has largely been routed through this framework, with allocations continuing through extensions and unutilised balances into the current period. However, while funding

intent has remained visible at the central level, its translation into consistent on-ground impact remains uneven.

### Key Challenges

One of the key challenges faced by the sector is the limited reach of allocated funds to farmers due to coordination gaps between central and state governments. Administrative bottlenecks like delays in fund release and variations in state-level implementation capacity have often diluted the effectiveness of budgetary provisions.

### About the AUTHOR

**Ms Namrata Khanna is Director – India Honey Alliance, a consortium of stakeholders across the value chain of the Indian honey industry, ranging from top brands, exporters, foundations, scientific experts and beekeepers. Her core strength lies in building multi-level relationships with key stakeholders across government and the private sector, managing stakeholders across multilevel projects, and aligning them for a common purpose**



As a result, a significant section of beekeepers, particularly small and marginal farmers, remains disconnected from formal support mechanisms despite the existence of national programmes.

The outcomes achieved so far underline the importance of addressing these gaps rather than scaling back support. India is now among the world's top five honey producers, with honey production increasing by more than 240 percent and exports growing by over 260 percent compared to 2005–06 levels. These figures reflect the economic relevance of apiculture and its ability to contribute to income diversification. They also demonstrate that when support reaches producers, beekeeping can deliver measurable returns. Beyond honey production, the sector generates wider agricultural value through improved pollination.

Crops such as pulses, fruits, vegetables and cereals serve as natural hosts for bees, and increased pollination activity enhances yields and output quality. Estimates suggest crop production can improve by around 15 percent when beekeeping is effectively integrated, reinforcing the argument that apiculture should be viewed as a productivity tool rather than only a niche livelihood.

### Expectations of India Honey Alliance

As discussions around the Union Budget 2026–27 gather momentum, the India Honey Alliance believes that the next phase of support must focus on broadening institutional ownership beyond a single mission framework. Strengthening allocations to allied ministries and departments is essential to ensure consistent sector development. The Ministry of Food Processing Industries, in particular, requires a dedicated allocation for apiculture training and processing.

Currently, honey processing and branding receive limited attention within broader food processing schemes, despite honey being a high-value natural product with strong domestic and export demand. Another priority area is the creation of a comprehensive national honey database. Increased funding across relevant ministries, including agriculture, food processing and beekeeping institutions, is re-



#### Top Priority Areas

- \* Examine funding numbers for the last fiscal years and suitably increase funding
- \* Strengthen allocation to other areas/departments ie MoFPI - specific allocation for apiculture training & development
- \* Currently budget allocation does not reach the farmers due to centre-state issues
- \* Increase funding for MOFPI, NBB, NBHM, AGRI departments to create honey database
- \* Allocation for consumer awareness & education

quired to build reliable data on production volumes, floral sources, regional strengths and farmer participation.

A structured and comprehensive government owned database would support better policy design and enhance market confidence, particularly in export markets.

Consumer awareness and education also warrant focused budgetary allocation. Despite production gains, domestic consumption remains constrained by limited awareness around the quality and health benefits of natural honey. Targeted campaigns can strengthen consumer trust, support organised players, develop new producers, and improve price realisation for farmers. Without demand-side support, production-led growth risks facing saturation.

#### Strengthening Regional Potential

Regional potential further reinforces the need for targeted funding. States such as Jharkhand, with significant forest cover

and favourable climatic conditions, offer strong opportunities for honey production. Another area is the North-east with a diverse and unique flora offering high value honey & other bee-products. Dedicated regional interventions supported by flexible budgetary allocations can help unlock this potential while promoting sustainable use of natural resources.

As India looks ahead to the Union Budget 2026–27, the Sweet Revolution offers a proven framework for allied agricultural growth. The focus now must shift from intent to delivery. Strengthened funding, improved inter-ministerial coordination, data-driven planning and consumer engagement will be essential to ensure that the honey sector transitions from policy-driven growth to long-term stability. For the India Honey Alliance and the wider ecosystem, continuity of support coupled with structural correction will determine the sector's sustained contribution to farmer prosperity and rural development.

# ENTREPRENEURS SEEK TECH-MANUFACTURING BUDGET THRUST



**A**s India prepares for the forthcoming Union Budget, the expectations from policymakers are higher than ever. The country today stands at the intersection of aspiration and opportunity—backed by a resilient economy, a vibrant startup ecosystem, and growing global relevance. At the same time, global uncertainties, supply chain realignments, and climate pressures demand a sharper focus on long-term national priorities rather than short-term fixes.

The Union Budget must therefore serve as a strategic roadmap—one that accelerates growth, strengthens domestic capabilities, and prepares India for the next decade of transformation. From an entrepreneur's perspective, especially in technology-led manufacturing and innovation, there are several critical areas that deserve focused attention.

## **Manufacturing Depth and Value Creation in India**

India has made visible progress in positioning itself as a manufacturing destination, but the next phase must focus on *depth*

### About the **AUTHOR**

**Mr Agnishwar Jayaprakash is Founder and Director of Garuda Aerospace, India's leading drone technology startup focused on developing advanced, low-cost Unmanned Aerial Vehicles (UAVs) for sectors like agriculture, defense, mapping, and logistics, offering "Drone-as-a-Service" (DaaS) solutions, drone manufacturing (including the Kisan Drone), and Remote Pilot Training (RPTO)**

*rather than scale alone.* The Budget should prioritise policies that enable end-to-end manufacturing within the country—covering design, testing, certification, and production.

Enhanced capital expenditure, expansion of incentive frameworks for advanced manufacturing, and easier access to long-term financing for MSMEs will be crucial. Manufacturing is not just about output; it is about building resilient supply chains, reducing import dependency, and generating skilled employment at scale. A stronger manufacturing base will also strengthen India's export competitiveness and global standing.

### **Research, Development and Indigenous Innovation**

Sustainable leadership in any sector begins with innovation. While India has emerged as a global hub for software and services, there is an urgent need to significantly strengthen investments in research and development across deep-technology domains.

The forthcoming Budget should increase allocations for applied research, encourage private-sector R&D through fiscal incentives, and promote closer collaboration between industry, academia, and public research institutions. Innovation ecosystems require patience and long-term vision—especially in sectors where product development cycles are longer. Dedicated innovation funds and outcome-linked grants can help bridge this gap and ensure that Indian intellectual property is created, protected, and commercialized domestically.

### **Technology-Driven Agricultural Transformation**

Agriculture remains central to India's economic and social fabric, yet productivity and income disparities continue to challenge the sector. The Budget must push beyond traditional support mechanisms and focus on accelerating technology adoption in farming.

Investments in mechanization, precision agriculture, digital advisory platforms, and data-driven decision-making can significantly enhance farm efficiency and resilience. At the same time, rural skilling and training

## **ELEVATE THE INDIA STORY**

Budgets shape confidence as much as they shape numbers. A forward-looking, execution-oriented Budget will empower entrepreneurs, strengthen domestic capabilities, and accelerate India's journey towards becoming a global economic and innovation leader. The decisions taken today will define the nation's trajectory for decades to come.

must be strengthened to ensure farmers and agri-entrepreneurs are equipped to adopt modern practices. A technology-enabled agricultural ecosystem will not only improve farmer incomes but also enhance food security and rural prosperity.

### **Skilling India for Future-Ready Industries**

India's demographic advantage can become its greatest strength—or its biggest risk—depending on how effectively skills are aligned with future industry needs. The Union Budget should prioritize large-scale skilling initiatives focused on advanced manufacturing, electronics, aerospace, renewable energy, and emerging technologies.

Upgrading vocational infrastructure, strengthening apprenticeship programs, and encouraging industry-led training models will help bridge the employability gap. Education must evolve from being degree-centric to skill-centric, ensuring that young Indians are equipped not just for jobs, but for innovation and entrepreneurship.

### **Access to Capital for Startups and MSMEs**

India's startup and MSME ecosystem has demonstrated extraordinary resilience and creativity. However, access to patient capital remains a persistent challenge, particularly for hardware, manufacturing, and deep-tech ventures.

The forthcoming Budget should strengthen credit guarantee schemes, expand venture debt options, and create dedicated financial instruments for long-gestation businesses. Simplified compliance frameworks and faster regulatory approvals will further enable entrepreneurs to focus on execution and scale. Capital accessibility is not merely a financial issue—it is a growth enabler that directly impacts innovation and employment.

### **Export Enablement and Global Integration**

As global supply chains diversify, India has a unique opportunity to position itself as a trusted production and export hub. The Budget should focus on reducing logistics costs, simplifying export procedures, and supporting Indian companies in meeting international quality and certification standards.

Encouraging export-oriented manufacturing and facilitating easier market access will help Indian enterprises integrate more deeply into global value chains. Export growth not only strengthens foreign exchange reserves but also drives technology adoption and quality improvement across industries.

### **Sustainability and Climate-Resilient Growth**

Economic growth and sustainability can no longer be treated as separate goals. The Union Budget must continue to encourage green manufacturing, renewable energy adoption, and climate-resilient infrastructure.

Incentives for energy-efficient technologies, circular economy models, and sustainable industrial practices will help businesses transition responsibly. Supporting innovation in clean technologies will also position India as a global leader in climate solutions, creating new economic opportunities while safeguarding future generations.

### **Building a Future-Ready India**

The forthcoming Union Budget is an opportunity to reinforce India's growth story with strategic intent. By prioritizing manufacturing depth, innovation, agricultural modernization, skilling, capital access, exports, sustainability, and policy stability, the government can lay a strong foundation for inclusive and resilient growth.

# Strengthen Dairy

## VIA FOCUS ON FEED, EXPANSION, RURAL ENTREPRENEURSHIP



### About the AUTHOR

**Ms Brahmani Nara is  
Executive Director of  
Heritage Foods Ltd, one  
of the fastest growing  
Public Listed Companies  
in India**

**T**he September 2025 GST rationalization has created favourable conditions for organized dairy, with consumer preference clearly shifting toward high-protein, health-focused products like paneer, cheese, ghee, and butter. Government initiatives, including the Rashtriya Gokul Mission and National Digital Livestock Mission, are integrating our 300,000-plus farmers into the organized ecosystem.

For the Union Budget 2026, we propose three priorities. First, subsidized access to quality feed and chromosome-sorted semen to improve animal productivity and support the aggressive dairy push that the Indian government has already announced. Second, expanding veterinary college capacity; India has 68,000 registered veterinarians against a requirement of 1.1 to 1.2 lakh. Third, increasing capital subsidies for mini-dairy units, particularly for women entrepreneurs, to generate rural employment and strengthen decentralized procurement.

Budget 2026 is expected to build on the prevailing momentum in the nation with further increases in capital allocations across irrigation, post-harvest infrastructure and rural logistics to reduce losses and raise farmer incomes. There is likely to be stronger backing for agriculture, including eNAM expansion, data-driven advisories and remote sensing, to increase efficiency and price discovery. MSP policy will remain central, with expectations of wider regional coverage and quality-linked procurement to better support farmers' returns.

India's dairy sector remains a backbone of rural livelihoods, contributing substantially to agriculture and allied output and providing daily incomes to millions of smallholders. Milk production has grown from more than 146 million tonnes a decade ago to over 239 million tonnes in 2023–24, with per-capita availability rising to more than 471 g per day, far above global averages.

### **Policymakers Are Expected To Prioritise Value Over Volume**

In Budget 2026, policymakers are expected to prioritise value over volume by directing funds towards cold-chain expansion, chillers and processing infrastructure, breed improvement, and animal health. Stronger support for value-added dairy products and export-oriented capacity is anticipated to help India increase its presence in international markets and lift rural incomes without overly expanding raw milk volumes.

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# WHY SAAS-BASED DIGITAL INFRASTRUCTURE MUST BE CENTRAL TO INDIA'S AGRI-FOOD VISION

Looking at the emerging developments, India's agri-food supply chains are at a turning point. Unpredictable weather, rising food safety norms, changing soil conditions and dynamic markets have become a part of everyday reality. These factors affect the day-to-day decisions, from sourcing to pricing, of food processors, exporters and consumer brands. The traditional open-market procurement system, which earlier worked well because of its flexibility factor, is now struggling to provide consistent quality, reliability and compliance.

As we approach the Union Budget 2026, it is essential to rethink where long-term resilience in the agri-food sector will

come from. While physical infrastructure and production incentives are still important, the next phase of growth will depend on how well food businesses engage with farmers and manage those relationships at scale. In this scenario, backward integration is becoming necessary.

## The Need for Backward Integration

For agri-food companies, raw material quality defines the end results. When crops fail to meet standards due to weather stress, pest issues, or inconsistent practices, the negative effects spread throughout the value chain. Processing losses, rejected consignments, compliance risks, and missed market commitments have become common problems.

Backward integration reduces this risk by bringing businesses closer to farms. Instead of sourcing anonymously from open markets, companies partner directly with farmers to plan production based on real market demand. This approach improves visibility across the supply chain, makes the sourcing process more reliable and

helps in maintaining quality. However, implementing it at scale is not easy.

## How Working Backward Rewards Farmers

When agri-food companies truly work backward from the market to the farm, the farmer's role changes in the supply chain. Farmers are no longer left on their own to tackle the price swings and production risks that come in front of them rather have become partners in a planned and more predictable system. Backward integration typically helps farmers in three key ways.

First, farmers get clarity on what to grow. The choice of suitable seeds and crops are influenced by the demand prevailing in the real market, processing needs and export requirements, rather than doing guesswork or going by local price signals.

Second, the farmers receive support on how to grow. Practical agronomy guidance focuses not just on yield but also on quality check and meeting standards consistently. This helps in reducing loss and ensure better outcomes.

Third and most important is clarity on where the produce will be sold. Buy-

## About the **AUTHOR**

**Mr Amit Maheshwari is a Founding Investor and Strategic Advisor to KhetiBuddy Agritech Pvt Ltd., bringing deep expertise in manufacturing, operations, and scaling profitable industrial businesses. As a founding investor, Mr Maheshwari continues to support KhetiBuddy's long-term vision of building enterprise-grade digital infrastructure for global agri-food supply chains, anchored in practical execution and sustainable business fundamentals**



back arrangements reduce uncertainty and help in stabilizing income. Together, these changes help farmers make better decisions on the ground and play a crucial role in improving their livelihood.

### The Scalability Challenge for Companies

Despite its benefits, backward integration is difficult to scale. Indian agriculture is highly fragmented, involving numerous smallholders across various crops, regions, and seasons. Managing this complexity manually raises costs, creates inconsistencies, and limits visibility. Many backward integration programs struggle because they depend on disconnected tools, spreadsheets, or inflexible custom-built systems.

These methods do not account for biological variability and seasonal changes. Without structured systems, companies struggle to track crop progress effectively, ensure advisory execution, or forecast supply accurately. This gap between strategy and execution is the single biggest barrier to large-scale backward integration.

### Why SaaS-Based Platforms Matter

Agriculture is not a typical business operation. It is an entire living system which is influenced by various factors like soil health, weather patterns, crop biology and the day-to-day decisions farmers make. Managing these operations at scale is not an easy task and requires a deep understanding of the overall sector.

This is exactly where SaaS based digital platforms for agri-food supply chains play a crucial role. They bring farm-level data, agronomy practices and market needs together into clear, structured workflows that are easier for businesses operating at scale to manage. Over the time, these platforms continue to improve by improvising existing features and introducing new ones along with strengthening insights and adapting to regulatory changes, without pressuring companies to rebuild their systems again and again.

In practice, more specialized platforms are now bridging the gap between farms and businesses, bringing both the sides in sync. Solutions like Verdnt which is



specifically built specifically for agri-food supply chain stakeholders, show how farm data can be organised to support better decisions across agronomy, compliance, sourcing and planning without any operational burden.

Compared to generic or one-off custom solutions, SaaS platforms offer consistency, scalability, and faster innovation, making them better suited for long-term backward integration.

### Signals from Global Supply Chains

Globally, leading food and beverage companies like PepsiCo, Nestlé, Starbucks, and Agristo have already adopted this model. They engage deeply at the farm level to ensure precision beyond just volume.

They source specific crop varieties suited to defined soil and climate conditions, plan seasons backward from factory needs, and align agronomy with procurement using digital systems. This reduces variability, improves compliance, and strengthens farmer relationships. The outcome is more resilient supply chains and better product consistency.

### Union Budget 2026: An Opportunity for Impact

The upcoming Union Budget offers a key chance to strengthen the digital foundations of Indian agriculture. Initiatives like AgriStack are setting the stage for a unified, trustworthy layer of farmer and farm-level data. This public digital infrastructure can enhance transparency, interoperability, and access to verified information

throughout the agri-food ecosystem.

However, data alone does not create impact. The real value of AgriStack will be realized when this foundational data is effectively integrated with private SaaS-based digital platforms and agri-focused ERP systems operating within agri-food businesses. These platforms are designed to fit the unique business processes of food processors, exporters, and integrated supply chain players—processes that vary by crop, geography, compliance needs, and market structure.

By aligning public data infrastructure with domain-specific operating systems, raw data can be contextualized, processed, and turned into actionable insights. This allows for timely decision-making in areas like crop planning, agronomy execution, compliance management, and supply forecasting—where delays or inaccuracies can lead to financial and operational risks.

### Incentivizing Intelligence

India's agricultural future will depend on how effectively uncertainty is managed. While physical infrastructure is important, its impact will be limited without digital intelligence. SaaS-based platforms that convert farm-level complexity into actionable insights are becoming essential to modern agri-food supply chains.

As the Union Budget approaches, supporting these platforms is an investment in stability, efficiency, and inclusion—ensuring that farmers are no longer isolated and that food businesses are better equipped to face an increasingly uncertain world.

# INDIA NEEDS SHIFT FROM SUBSIDY LED AGRICULTURE TO INVESTMENT LED AGRICULTURE

*“Cultivated land is the source of wealth, the life of the nation. Through crops, food is obtained, increasing prosperity, Agriculture is the cause of everything.”*

India's food system stands at a strategic inflection point. Agriculture contribution to India's economy is approx. 16% which is equivalent 500 byn. By 2047, we estimate Agriculture contribution will be 12% of the economy, equivalent \$2.4 trillion Ag economy.

So the journey of Agriculture from \$

India Farm GDP Projections		
India Ag and Food Sector is poised for Robust Growth		
Target Level of Per-Capita GDP for India in 2047-48		
	Current 2023-24	2047- Govt Projection 2047-48
Nominal GDP (USD billion)	3150	30000
Nominal Per Capita GDP (USD)	2302	21664
Share of Agriculture India	16%	8%
	504	2400
		476%
Expenditure	70%	70%
Food	50%	30%
Amount	1102.5	6300
		571%

500 byn to \$2.4 trillion in India is a big opportunity.

## Food consumption in India

The food economy is poised to grow exponentially. As per estimates, an average Indian spends 70% of their income out of which 50% is spent on food. Therefore, the food economy today is \$ 1.1 trillion.

As the economy progresses to \$ 30 trillion, average Indian even if spends 30% on food, it will be tantamount to \$ 6.3 trillion

The exponential growth in Food and Agriculture needs strong impetus on asset increase, stronger processing, manufacturing base and value-added solutions.

## About the AUTHOR

**Ms Garima Jain has 20 years of work experience in India and the global food and agriculture sector. She brings diversity to the sector as amongst a few women traders in Indian Commodity Trading community. She is an alumna of Harvard Business school (HBS Boston), Tata Institute of Social Sciences (TISS Mumbai), Indian Institute of Foreign Trade (IIFT Delhi) and HBTI Kanpur**

Therefore, the focus in this budget should be a shift from subsidy led Agriculture to investment led agriculture in India.

The key focus areas and suggestions are as follows:

### 1. Protein segment

Pulses offer significant environmental benefits through biological nitrogen fixation, reduced fertilizer use, improved soil health, and lower greenhouse gas emissions. A combined price + climate incentive framework can structurally shift farmer behaviour by aligning income security with environmental outcomes.

#### Recommendations

Introduce an innovative model of Incentivizing Indian farmers to plant and harvest more pulses – MSP + Carbon sequestration incentive scheme

(a) Introduce Price Deficiency Payments (PDP) where physical procurement is not feasible.

(b) Introduce a per-hectare / per-ton incentive for farmers cultivating pulses, recognizing their climate-positive externalities.

(c) Incentivize pulse processing (dal mills) near production clusters

### 2. Use of GIS and satellite monitoring for better estimates on supply / production

Better Weather- Crop Interaction Mechanism – closer monitoring to pre-empt weather events that can impact production and taking remedial actions accordingly

#### Recommendations

(a) Satellite-based acreage verification – production data in India often faces challenges as the gap between first and 4<sup>th</sup> advance estimate see huge variation. This poses challenges in accurate planning for procurement and policy related steps.

Invest in satellite-based acreage verification is a must

(b) Soil carbon benchmarks at district/cluster level – invest in benchmarking exercise – identify scientifically credible, scalable, and low-cost soil organic carbon (SOC) benchmarks at the district or production-cluster level. Post this,

(c) Use of AgriStack + remote sensing

(d) Annual carbon impact reporting by

implementing agencies

### 3. Increase Productivity / yield

India lags on productivity on most of the crops.

#### Recommendations

There is a need and investment focus on

(a) Making available Better Seed varieties – Drought resistant varieties, especially for kharif crops and Heat-resistant varieties in case of Rabi crops like Chickpeas

(b) Promoting crop duration in Pigeon Peas

(c) Facilitate grading of output – this will enable farmers to get better realisation for their produce

(d) Improving supply chains by incentivizing more efficient movement and storage of Pulses to reduce post-harvest wastages.

### 4. Oilseeds

Sector faces key issues on yield stagnation, Import dependence during shortages and hence Price volatility discouraging acreage expansion

#### Recommendations for Investments on

(a) Promote mustard, soybean, sunflower via assured procurement corridors

(b) Encourage oilseed crushing capacity with fiscal incentives

This will help to Reduce import bill, promote crop diversification and enhance rural jobs.

### 5. Horticulture

Sector faces huge harvest losses. Investments for fragmented cold chain and Export rejections due to quality inconsistency

#### Recommendations for Investments on

(a) Create Cluster-Based Horticulture Infrastructure Program

(b) Micro cold storages, packhouses, ripening chambers

(c) Export-linked quality certification and traceability

It will enable Loss reduction, export

growth, better price realization

### 6. Grains (Rice, Wheat, Coarse Cereals)

Key Issues are high procurement costs, Water stress and limited value addition

#### Policy Recommendations for investments -

(a) Incentivize crop diversification toward millets & maize

(b) Invest in grain processing (ethanol, feed, starch)

(c) Modernize storage & grading systems

This will have a positive impact on Sustainability, fiscal efficiency, higher non-MSP demand

The proposed integrated approach delivers multi-dimensional strategic impact for India's food and agriculture system. By incentivizing domestic production of pulses and other priority crops, it strengthens food security while structurally reducing import dependence. Linking farm incentives with soil health and carbon outcomes builds long-term climate resilience, enabling agriculture to adapt to increasing weather and resource stress. Assured pricing combined with sustainability-linked incentives enhances farmer incomes and income stability, encouraging crop diversification and higher on-farm investment. Together, these measures improve productivity, quality, and market reliability, positioning India as a more competitive and credible global supplier of agricultural commodities and food products.

This approach positions India as a global leader in climate-smart food systems by rewarding sustainable production practices at scale. It aligns agricultural support with India's climate commitments by monetizing soil health and carbon outcomes, while shifting public expenditure from input-intensive cereal subsidies toward outcome-based, performance-linked incentives that deliver both economic and environmental returns.

# FMCG EYES BUDGET BOOST FOR AGRI SUPPLY CHAINS

**A**s the FMCG sector continues to mirror India's consumption recovery, Budget 2026–27 will be closely watched for deeper focus on infrastructure, agri-linked supply chains, farm productivity and technology. While recent tax relief and rural support have helped stabilise demand, key expectations around clean food incentives, sustainability and efficient last-mile distribution remain largely unmet.

Going ahead, policy continuity that strengthens farm-to-consumer value chains, supports MSMEs, rationalises GST on essential and minimally processed foods, and enables traceability-led growth can help responsible FMCG brands scale sustainably. Such measures would improve affordability for consumers while ensuring fairer value distribution back to farmers.

## Clean-by-Proof Revolution in Indian Staples

We are India's first and only brand to ex-

tend glyphosate-free certification across key staples. Our company, Two Brothers Organic Farms, has set new benchmark for verified clean food. As glyphosate use rises silently across Indian agriculture, our company's staple products undergo independent residue testing, signalling a

shift from 'organic by practice' to 'clean by proof.'

We are happy to say that following the landmark certification of its A2 Cultured Ghee as India's first independently verified Glyphosate Residue-Free ghee, our company Two Brothers Organic Farms has announced the successful expansion of the same certification across additional everyday staples - Khapli Atta, Amlaprash, and Jaggery.

The certifications have been awarded by [DetoxProject.org](https://www.detooproject.org), an internationally recognised third-party organisation that independently verifies food products for the absence of detectable glyphosate residues through stringent laboratory testing of the final consumable product.

With these additions, Two Brothers Organic Farms becomes one of the very few Indian food brands to voluntarily test and certify multiple categories for glyphosate residues, moving decisively beyond compliance-led organic practices toward science-backed food safety verification.

### About the **AUTHOR**

**Mr. Satyajit Hange is the Co-founder of Two Brothers Organic Farms, based in Bhodani village, Indapur, Maharashtra, India. Founded in 2012, the company focuses on regenerative, chemical-free, and sustainable agriculture**





### The Perils Of Glyphosate Exposure

Glyphosate exposure remains a largely invisible concern in India's food system. While legally approved only for limited use, the herbicide is widely applied across food crops through off-label and unregulated channels. Residues persist not just in soil and water, but travel through fodder, grains, sweeteners, and processed foods, many of which are consumed daily by families and children.

Products such as atta, jaggery, and amlaprash are dietary staples in Indian households, often perceived as inherently safe due to their traditional origins. However, without routine residue testing or defined MRLs for glyphosate in many Indian crops, long-term exposure remains undocumented.

By extending Glyphosate Residue-Free Certification to these products, Two Brothers Organic Farms reinforces a critical shift in food safety thinking from focusing only on how food is grown to verifying what ultimately reaches the consumer's plate.

The certification process mandates:

- Independent testing of the final consumable product
- Analysis through ISO-accredited laboratories
- Detection limits as low as 0.01 ppm (10 ppb) — among the most stringent globally

Our brand has also confirmed that additional products across its portfolio are currently undergoing testing, with certifications to be rolled out in phases.

Following the landmark certification of our A2 Cultured Ghee as India's first independently verified Glyphosate Residue-Free ghee, our company has announced successful expansion of the same certification across additional everyday staples - Khapli Atta, Amlaprash, and Jaggery

When we certified our ghee, it was never meant to be a one-off milestone. Atta, jaggery, and traditional formulations like Amlaprash are consumed far more frequently, often daily, and across age groups. Extending glyphosate-free certification to these products was a natural and necessary next step. If a food is part of everyday nourishment, it deserves verification, not assumptions.

Organic intent is important, but intent alone is no longer enough. As awareness around chemical residues grows globally, food safety must be built on testing, transparency, and disclosure. Our goal is to systematically certify as many products as possible and demonstrate that clean food can and should be proven by science. With the expanded Glyphosate Residue-Free Certification, Two Brothers Organic Farms continues to strengthen its commitment to regenerative agriculture, traceability, and verified food integrity, while signalling a broader shift the Indian food ecosystem must make from trust-based claims to evidence-led stan-

dards.

Our company, Two Brothers Organic Farms is a farmer-owned, soil-first organic food company from India. We grow and craft real food with no shortcuts, using the principles of regenerative natural farming. Me and my brother Ajinkya Hange, Co-founder, Two Brothers Organic Farms, left corporate careers to return to our ancestral village. Two Brothers Organic Farms is a movement to bring back the truth in our food system where food is nutrient-dense, chemical-free, and traceable to its roots.

### Why We Are Doing This

Our food system is broken and needs healing- people don't know what they eat, how it's grown and who grows it. Two Brothers Organic Farms is fixing it by growing real food and bringing it back to every single home in the world. The brand wants people to stop consuming for convenience and start consuming mindfully because their bodies deserve much better. Our enemy is the broken food system.

# AGRITECH

## BRIDGING THE BHARAT-INDIA DIVIDE

India's agricultural sector, long called the backbone of the economy, employs nearly 43% of the workforce and contributes about 18% to the GDP. In the April–June 2025 quarter, agriculture engaged the majority of rural workers (44.6% of men and 70.9% of women), while services dominated urban employment. Yet, despite being the world's second-largest agricultural producer, India accounts for only 2.2% of global agricultural exports (WTO Trade Statistics 2024).

This gap between potential and performance highlights a deeper challenge: the divide between Bharat, rural, traditional, under-equipped, and India, urban, progressive, and digital.

### The Challenges

Most of India's farms remain monsoon-dependent, fragmented, and reliant on traditional practices. Small landholdings make mechanisation difficult, and limited access to capital, training, and



technology constrains resilience. While countries like the US, Brazil, and the Netherlands have modernised agriculture with automation and data-led systems, Indian farmers face the burden of climate shocks, soil erosion, water scarcity, and poor crop outputs.

Ironically, technology exists for every stage of cultivation, from seeding to harvesting, yet adoption remains low

because most farmers can't afford it or lack the ecosystem to use it efficiently. However, the good thing about technology is that it's able to bridge the gaps creatively.

### About the **AUTHOR**

**Mr Swapnil (Neil) Jadhav is Founder & CEO, MapMyCrop, a pioneering agritech platform that uses satellite imagery and AI to provide “Monitoring-as-a-Service” (MaaS) for sustainable, data-driven farming. Founded in 2021 within Hardcastle Agrotech Solutions, the platform is designed to make agriculture sustainable and traceable by offering real-time, plot-level intelligence to farmers, agribusinesses, and financial institutions**





### Bridging the divide

The government has recognised the urgency to boost farm economies. In September 2024, the Union Cabinet approved the Digital Agriculture Mission, with an outlay of Rs 2,817 crore, aimed at empowering farmers through technology and ensuring greater transparency in farm support. This landmark initiative represents a decisive shift, from subsidy-based assistance to data-driven empowerment, anchored in digital platforms, remote sensing, and AI-led decision tools.

So far, India invests less than 1% of its GDP in agricultural research, compared to over 6% in Israel, underscoring the need for deeper innovation. The Digital India push seeks to bridge this gap by ensuring that the fruits of modern technology - artificial intelligence, spatial analytics, sensors, and the Internet of Things, percolate to the last mile, reaching farmers where it matters most. By enhancing crop productivity, improving climate resilience, and fostering real-time market access, this mission has the potential to transform rural economies into engines of inclusive growth.

### The Significance Of Agritech

Agritech has emerged as a key theme in India's international trade dialogue. New Zealand Trade Minister Todd McClay recently said that agritech forms a "big part" of ongoing Free Trade Agreement (FTA) negotiations with India, an

**Agritech helps make growth more inclusive. The path to a Viksit Bharat runs through its farms, and technology will be the bridge that unites Bharat and India**



indication that the world now sees India not just as an agricultural market, but as a potential global hub for agricultural innovation and technology exchange.

According to a McKinsey report on value creation in Indian agriculture, if India fully leverages its structural advantages, diverse agro-climates, digital infrastructure, and entrepreneurial energy, the sector could grow to \$1.4 trillion by 2035 and \$3.1 trillion by 2047.

The world over, agritech is reshaping how farmers plant, predict, and profit. From AI-driven crop analytics and IoT-enabled irrigation to drones monitoring soil health and pest damage, digital tools are making farming smarter, more resilient, and less dependent on guesswork.

Recent floods in Punjab that destroyed over 4 lakh acres of farmland and caused losses exceeding Rs 6,000 crore show why this transformation is critical. Smart weather forecasting, precision farming, and real-time crop moni-

toring help mitigate such losses and rebuild farmer confidence.

### Revolution in the fields

Thankfully, there are some tailwinds. India's agritech ecosystem is showing green shoots. Between 2013 and 2020, the number of agritech start-ups grew from fewer than 50 to over 1,000, driven by rising internet penetration, smartphone access, and investor interest. Venture capital funding has poured into farm-to-market platforms, supply chain digitisation, and climate-tech innovations.

The agri sector's transformation requires collaboration, government policy, industry innovation, academic research, and community adoption must move in tandem. By providing timely and reliable information on optimal farming practices, mobile phones can foster technology adoption and increase productivity. Spatial technology powered by AI is being used to gather insights on weather patterns and soil productivity. India's farm economies will continue to remain fragile unless government policies, farm economics, and technology adoption are reworked and aligned to benefit poor farmers in remote areas.

It's the IT sector's job to paint a vision of the future that is faster and smarter. Agritech helps make growth more inclusive. The path to a Viksit Bharat runs through its farms, and technology will be the bridge that unites Bharat and India.

# THE RE-IMPOSITION OF US TARIFFS, INCLUDING THE PROPOSED 25 PC LEVY, ADD AN ADDITIONAL CHALLENGE TO THE INDIAN BASMATI SECTOR

In light of the recent developments around fresh US tariffs, there is concern over its potential impact among Indian agri exporters.

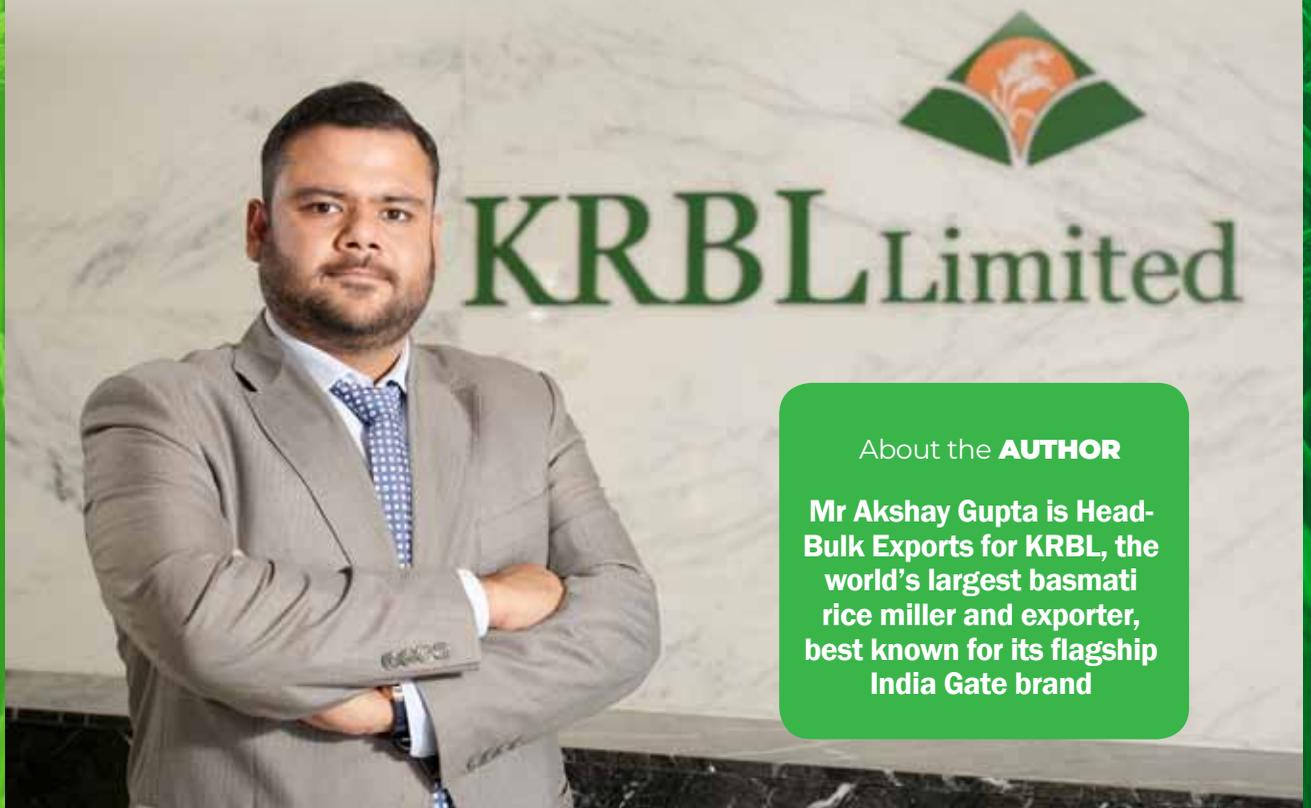
Iran has historically been a key export market for Indian basmati rice, with strong and consistent consumer demand. When trade with Iran was fully open, KRBL exported nearly 250,000 tonnes of basmati rice to the market. However, over the years, sanctions and increasing operational restrictions have significantly impact-

ed the scale of business.

At present, our exposure to the Iran market is limited to around \$8-10 million and is being managed prudently. Given the constrained nature of direct trade, a majority of transactions are routed through the UAE, where Iranian importers operate locally. This structure has helped mitigate operational and payment-related risks.

Historically, basmati rice exports to Iran have been exempt from U.S. sanctions, as food and pharmaceuti-

cal supplies are permitted under humanitarian exemptions. Trade in these essential commodities has therefore remained fully compliant with international regulations. We highly urge and recommend that no punitive measures should apply to countries or entities operating within these sanctioned frameworks. That said, the re-imposition of U.S. tariffs, including the proposed 25% levy under the Trump framework, adds another layer of uncertainty and challenge for the Indian basmati rice sector.

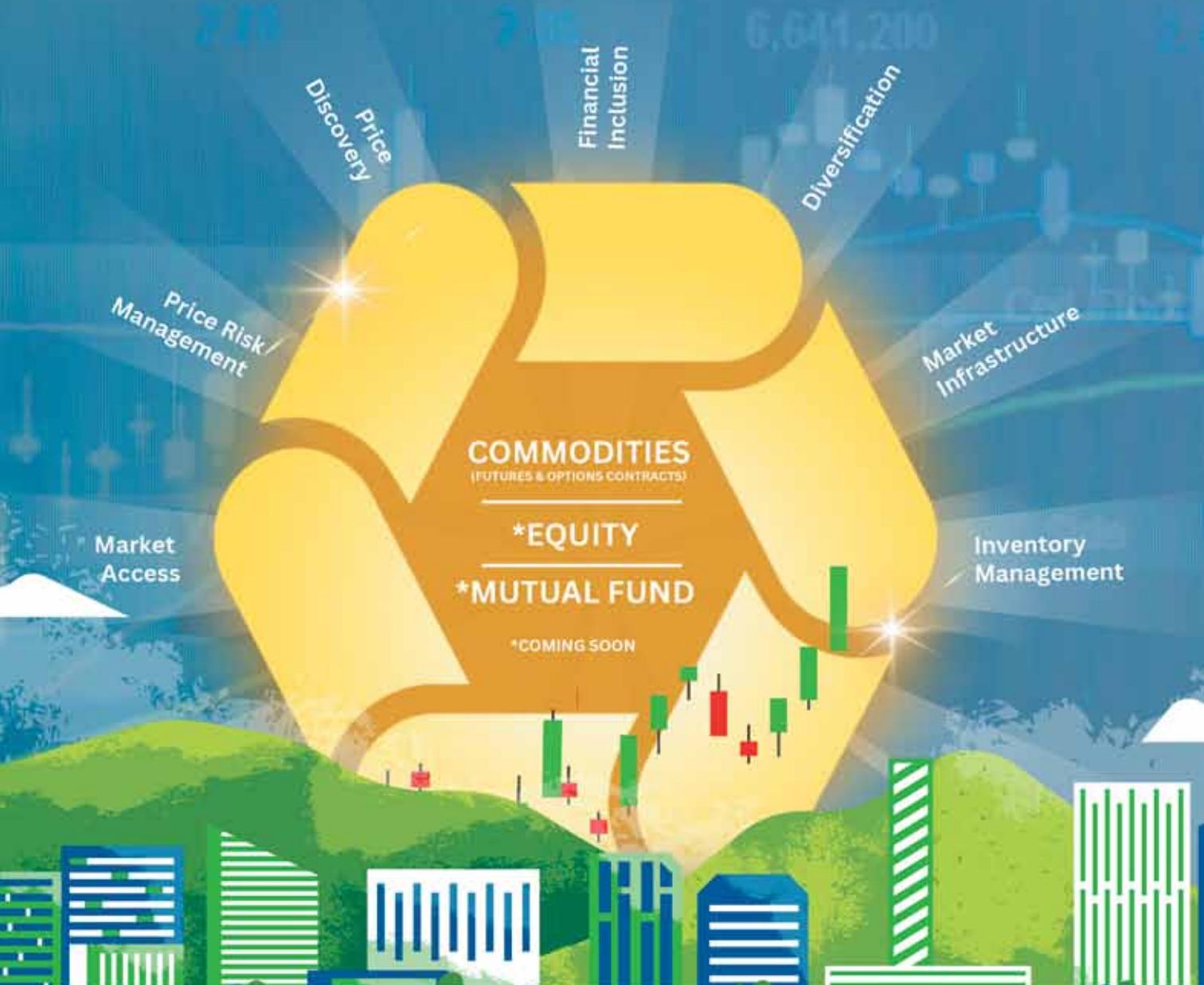


## About the **AUTHOR**

**Mr Akshay Gupta is Head-Bulk Exports for KRBL, the world's largest basmati rice miller and exporter, best known for its flagship India Gate brand**

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# CROPLIFE INDIA RAISES CONCERNS OVER SALE OF UNAUTHORIZED PESTICIDES ON E-COMMERCE PLATFORMS PRESSES FOR A STRONG JOINT GOVERNMENT-INDUSTRY FRAMEWORK TO ENFORCE RULES



CropLife India, the leading association of 17 R&D-driven crop protection companies, has raised serious concerns over the unchecked sale of unauthorised crop protection products through e-commerce platforms, calling for urgent strengthening of regulatory supervision, enforcement obligations and accountability in online sale of pesticides. The association noted that as the Government undertakes a broader review of pesticide regulation through the Draft Pesticides Management Bill, 2025, emerging risks linked to online sale must be addressed clearly and explicitly.

The issue was highlighted during CropLife India's National Conference on Crop Protection Products Sale on E-Commerce Platforms, held in New Delhi, which brought together policymakers, regulators, industry representatives and other stakeholders to examine how agri-input sales are moving online and what regulatory responses are required to safeguard farmers and the integrity of the supply chain.

### **Need For Stronger Quality Assurance, Traceability, Supply-Chain Accountability**

Addressing the conference, Dr. P. K. Singh, Agriculture Commissioner, Ministry of Agri-

culture & Farmers Welfare, Government of India, noted that basic compliance checks by e-commerce platforms such as GST documents of sellers may not be sufficient when hazardous agri-inputs are sold online. He emphasised the need for stronger quality assurance, traceability and supply-chain accountability and said these issues merit consideration under the Pesticides Management Bill, 2025.

Dr. Subhash Chand, Secretary, CIB&RC, Government of India, observed that while digitisation and e-commerce are expanding rapidly in rural India, they also bring new risks. He stressed that pesticides are hazardous products and that responsibility for quality, compliance and farmer safety must be shared by

platforms and manufacturers as online sales grow. Mr. Ravi Shankar, Domain Lead - Agriculture, ONDC, highlighted the need for better cataloguing, advisory details and traceability to help farmers identify genuine products and reduce the risk of spurious inputs.

### Need to Develop Framework That Effectively Addresses Existing Gaps

Speaking at the conference, Mr. Ankur Aggarwal, Chairman, CropLife India said, "We are not against the sale of pesticides on e-commerce platforms. This engagement is about ensuring that regulatory and enforcement frameworks evolve with the realities of digital commerce. Tackling unauthorised products remains a shared priority for policymakers and the crop protection industry and is critical for farmer safety, food security and consumer trust. Today's conference intends to engage all stakeholders and develop a framework that could effectively address existing gaps."

CropLife India explained that crop protection products are regulated under the Insecticides Act, 1968 and the Insecticides Rules, 1971, which establish a tightly controlled system for sale and distribution. Under this framework, pesticides can only be sold by licensed sellers, for specific products endorsed on their licence, within approved geographic areas and supported by a valid and subsisting Principal Certificate issued by the manufacturer or importer. These controls are designed to ensure product authenticity, traceability and accountability across the supply chain.

### Regulatory Gap

Under the existing framework, e-commerce platforms facilitating the sale of pesticides are not currently required to obtain licences or approvals specifically under pesticide law, nor are they subject to explicit statutory obligations to verify whether products listed online are endorsed on the seller's licence or supported by valid Principal Certificates. This creates a regulatory gap in which platforms can enable the listing and sale of pesticides without clear accountability, increasing

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the risk of unauthorised products reaching farmers.

The association noted that pesticides are being sold online through both marketplace and inventory-based e-commerce models. In inventory-based models, pesticides may be stored, handled and dispatched from warehouses that are not licensed under the Insecticides Rules, even though identical activities require licensing in the offline supply chain. This weakens regulatory oversight and makes inspection, sampling and traceability significantly more difficult.

CropLife India clarified that Rule 10E of the Insecticides Rules, introduced through a 2022 amendment, permits online or doorstep delivery of pesticides, but does not dilute or override existing requirements relating to licences, Principal Certificates, approved premises, or geographic restrictions. According to the association, this provision has, in some cases, been misconstrued to suggest that online sale or delivery removes the need for licences or authorisations, enabling unauthorised sale through digital channels.

Under the current enforcement architecture, inspections, sampling and

verification are conducted primarily at licensed premises. In contrast, storage in warehouses and movement of pesticides through e-commerce supply chains often fall outside routine regulatory supervision, limiting the ability of authorities to quickly trace responsibility and take timely action against spurious or illegal products, even when risks are identified.

Mr. Aggarwal reiterated that while the Draft Pesticides Management Bill, 2025 seeks to strengthen India's pesticide regulatory framework, it does not explicitly address several critical e-commerce-specific gaps, including platform-level accountability, licensing obligations in inventory-based models and digital traceability across online supply chains. The association will place its consolidated views on these issues through the formal consultation process.

"Digital commerce is an important and growing channel," Mr. Aggarwal added. "The way forward is regulated enablement. As sale models evolve, regulatory and enforcement frameworks must evolve as well, so that farmers receive genuine, compliant products and confidence in the system is preserved."

# BUDGET PERSPECTIVES



**Mr Navin Bhushan, Partner, MicroSave Consulting (MSC), a global inclusion consulting firm that works with governments, providers, and innovators to enable social, financial, and economic inclusion for everyone in the digital age. Its local teams in 70+ countries bring practical expertise across finance, technology, agriculture, and social protection.**

"The Indian agriculture sector is at the cusp of transformation, with policy and market trends converging around technology adoption, digital public infrastructure, aggregation, and export competitiveness. Year 2026 is expected to be shaped by the scale-up of flagship initiatives. Agri Stack has already demonstrated proven use cases of AI-based advisories, MSP integration, and banking linkages. With over 70 million Farmer IDs issued and coverage steadily expanding, this momentum is set to deepen. The digital momentum will also be anchored by platforms like VISTAAR to expand digital extension. Policy focus is also sharpening on targeted interventions, with PM Dhan Dhanya Krishi Yojana empowering 100 districts and continued export acceleration under AEP and Operation Greens. We can thus expect 2026 as a defining year for a more globally integrated and technology-driven agriculture sector."

"Sustainable development is fundamentally rooted in local communities. We anticipate an increased allocation for Livelihood Missions that strategically integrate SHGs into formal value chains, with a specific focus on Green Jobs such as solar infrastructure maintenance and circular waste management systems. Rather than relying on traditional subsidies, the budget should focus on better product design and financial de-risking mechanisms for Climate-Resilient Agriculture. By refining the design of financial and technical products, the government can empower farmers to adopt sustainable practices that are commercially viable and scalable. By aligning community-level livelihoods with India's NDC goals, the government can build economic resilience against climate-induced disruptions. This approach ensures that growth is not just inclusive but fortified against environmental volatility, effectively institutionalising a circular economy at the grassroots level."



**Ms. Ayushi Mishra, Climate Finance Expert, MicroSave Consulting (MSC)**



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