

## Agri co-operatives are vital for India's rural economy

AGRICULTURAL cooperatives are vital for empowering small-holder farmers, offering solutions to limited market access, high input costs, and climate vulnerabilities. The National Academy of Agricultural Sciences (NAAS) highlights that these localised institutions are essential for advancing inclusive rural prosperity and sustainable agricultural development in India.

These cooperatives are vital to India's rural economy. With nearly 90% of farmers being smallholders, cooperatives enhance bargaining power, streamline bulk input purchases, and connect farmers to modern markets. They ensure inclusive growth and sustainable development against climate and technological challenges.

They form the backbone of the rural economy, playing a crucial role in empowering farmers, providing access to credit, and ensuring fair market prices for produce. They support grassroots socio-economic development and drive food security across the nation.

Over the past 12 years, India's agricultural sector has witnessed a comprehensive expansion in farmers' empowerment. The focus has widened beyond welfare support towards strengthening productivity, income security, market access, infrastructure, and institutional resilience.

Higher agricultural output, expanded irrigation, greater access to credit, stronger insurance coverage, and growth in allied sectors have contributed to this transition. Simultaneously, expanded MSP operations and procurement systems have strengthened market assurance, ensured remunerative pricing, and supported national food security objectives. Furthermore, digital platforms, cooperatives, food processing, and climate-resilient initiatives have created new opportunities across the agricultural value chain. These developments reflect a gradual shift towards a more diversified, technology-driven, and farmer-centric agricultural system.

The agriculture and allied sector accounts for about 18 percent of total Gross Value Added (GVA). During this period, the sector registered a compound annual growth rate (CAGR) of 8.83 percent at current

prices. Growth has also been supported by improvements within the crop segment. The GVA of crops rose from Rs. 12,92,874 crore in 2014-15 to Rs. 26,52,891 crore in 2023-24.

Public investment in the agricultural sector has increased substantially over this period. Budgetary allocation for the Department of Agriculture and Farmers Welfare increased from Rs.27,663 crore in 2013-14 to Rs.1,40,528.78 crore for 2026-27. This significant rise reflects the sustained policy support and continued investment in agricultural infrastructure, strengthening overall agricultural expansion.

Total foodgrain production has increased from 265.05 million tonnes in 2013-14 to 357.73 million tonnes in 2024-25. The growth has been driven by higher production of rice, wheat, maize, and coarse cereals. This also included millets, now promoted as Shree Anna. This growth has been supported by the National Food Security and Nutrition Mission (NFSNM). The mission promotes higher production of rice, wheat, pulses, and coarse cereals. It supports improved seeds, better agronomic practices, and technology adoption.

Rice touched a record production of 150.18 Mt in 2024-25, a 42.38 percent increase compared to 2014-15 (105.48 Mt). India became the world's largest rice producer.

Wheat recorded the highest production of 117.94 Mt in 2024-25, rising over 36 percent since 2014-15.

Maize production also reached 43.40 Mt in 2024-25, an increase of around 79 percent from 2014-15 (24.17 Mt). The horticulture sector has also emerged as a key contributor to agricultural growth. It accounts for nearly 37 percent of the Gross Value Output within the crop sector. Production has increased from 280.70 million tonnes in 2013-14 to 369.05 million tonnes in 2024-25. This expansion indicates diversification towards high-value crops, supported by improved practices and market demand. The Minimum Support Price (MSP) acts as a safeguard by ensuring pre-determined prices for agricultural produce. MSPs are announced annually for 22 mandated crops.



# War profits while soldiers die: The \$580m insider trading question

## Senators Warner, Schiff raise concerns over selective disclosure of market-moving information

CHOLLETT

SHORTLY after 7 am Eastern Time on March 23, 2026, President Donald Trump posted on Truth Social that the United States was postponing planned strikes on Iranian energy infrastructure. Oil prices plummeted more than 10 per cent within minutes. Global stock markets surged. The announcement surprised diplomats, military analysts, and markets worldwide.

Everyone, that is, except the traders who had placed more than \$580 million in oil futures in the preceding 16 minutes — a surge in volume for which no public news could account. The trades were executed with such speed, scale, and precision that Representative Ritchie Torres of New York, in an official letter to the Securities and Exchange Commission and the Commodity Futures Trading Commission (CFTC) on April 8, described them as "potentially the largest instance of insider trading in history."

"The facts are so glaringly obvious neither the SEC nor the CFTC can afford to ignore them," Torres said. But this was not an isolated incident. It was the latest — and most lucrative — in a documented pattern.

**The pattern in plain sight**

A comprehensive BBC investigation published on April 20, 2026 analysed trade volumes across oil futures, stock indices, and prediction markets, correlating them with Trump's most market-moving announcements. The finding was stark: a consistent trend of trading spikes occurring hours, and sometimes minutes, before the President made a social media post or media appearance.

**Consider the chronology:**

On April 9, 2025, Trump announced a 90-day "pause" on his sweeping Liberation Day tariffs. At 18:00 British Summer Time — 18 minutes before the announcement — trading volume on one S&P 500 tracking fund surged from hundreds of contracts per minute to over 10,000 per minute. Some traders placed bets exceeding \$2 million on stock market gains after a week

of consecutive losses, potentially netting profits of nearly \$20 million.

On February 28, 2026, six newly created accounts on the prediction market Polymarket all bet on a US strike on Iran occurring that day. When Trump confirmed the attacks that morning, the accounts collectively earned \$1.2 million. Five of the six accounts never placed another bet.

In December 2025, a single Polymarket account named "Burdensome-Mix" wagered \$32,000 on Venezuelan President Nicolás Maduro being ousted by the end of January 2026. The next day, US special forces captured Maduro. The account profited \$436,000, immediately changed its username, and has not traded since.

On April 7, 2026, Trump announced a two-week ceasefire with Iran. In the hours before, traders placed approximately \$950 million in bets anticipating a decline in oil prices. When oil fell by roughly 15 per cent following the announcement, those who had placed the bets reaped enormous, unexplained profits.

Senator Elizabeth Warren of Massachusetts and Senator Sheldon Whitehouse of Rhode Island wrote to Commodity Futures Trading Commission (CFTC) Chairman Michael Selig on 10 April: "This pattern raises serious questions about whether there has been recurring misappropriation of material non-public government information and about the extent to which individuals inside or outside the government have acted on such information."

The CFTC, Bloomberg reported on April 15, has confirmed it is investigating at least two such instances, requesting trading data from CME Group and Intercontinental Exchange.

**The regulatory vacuum**

The insider trading that is illegal for most Americans under the Securities Act of 1933, and was expressly extended to US government officials by the Stop Trading on Congressional Knowledge (STOCK) Act of 2012, has resulted in zero prosecutions under that law to date.



As Professor Paul Oudin of ES-SEC Business School told the BBC: "Financial authorities will not pursue a prosecution if they cannot identify the source of the information. You can observe significant trades on a financial instrument that clearly suggest someone had advance knowledge of Trump's forthcoming declarations. Yet there is a strong likelihood that no one will face prosecution."

The institutional framework for detecting such misconduct has been actively dismantled. The Justice Department's Public Integrity Section — created after Watergate to prosecute corrupt officials — has been reduced from 36 attorneys to just two and has lost its authority to initiate new cases. According to Public Citizen, the administration terminated 159 federal enforcement actions against 166 companies in 2025, more than 30 of which had contributed to Trump's inauguration or White House events. Reuters reported, citing three unnamed officials, that the SEC's chief enforcement officer resigned after agency leadership obstructed her from aggressively pursuing cases involving Trump's associates.

The Financial Times further disclosed that a broker linked to Defence Secretary Pete Hegseth was poised to make a multimillion-dollar investment in a defence-related fund just before the White House initiated actions against Iran. Senators Mark Warner and Adam Schiff wrote to the SEC and the Pentagon's Inspector General on 2 April, calling this "deeply troubling" with "serious implications for US national security."

**The White House responds — and admits the risk**

On March 24, 2026 — the day

after Trump's "complete and total resolution" post — the White House sent an internal, staff-wide email warning employees not to use confidential information about the Iran conflict for trading on prediction markets or financial markets. The Wall Street Journal first reported the email; the White House did not deny its existence.

Spokesman Davis Ingle stated: "President Trump has been unequivocal: while he aims for a robust and profitable stock market for all, members of Congress and other government officials must refrain from exploiting nonpublic information for personal gain. Any suggestion that Administration officials are participating in such activities without evidence is unfounded and represents irresponsible journalism." But the fact that an internal warning became necessary at all is itself an admission. If there were no risk of insider trading, no warning would have been required.

**The balance: What we know and what we do not**

It must be stated with equal emphasis what has not been established. There is no evidence that President Trump himself was aware of or directed any of the suspicious trades. The White House has denied all allegations. No charges have been filed, and no specific trader or official has been publicly identified. The anonymity of prediction market accounts makes it possible, though statistically improbable, that the pattern reflects exceptionally skilled independent speculation rather than access to nonpublic information.

But probability is not the standard — credibility is. When six newly created accounts simultaneously predict a military

strike with precision and vanish after collecting millions; when oil markets see half-a-billion-dollar surges minutes before war announcements; when an administration has gutted the enforcement mechanisms designed to detect such conduct — the cumulative weight of the pattern demands investigation, not dismissal.

**The constitutional stakes**

This is not merely a question of securities law. It implicates the foundational premise of democratic governance: that public power is exercised for public purposes, not private profit.

The STOCK Act was passed with overwhelming bipartisan support in 2012 precisely because the American people had lost faith that their leaders traded on a level playing field. If that faith is now broken again — not through congressional stock tips but through war announcements that move markets by trillions — the damage to democratic legitimacy will be profound. Senators Warner and Schiff put it plainly: "The perception that material nonpublic information might be distributed unevenly prior to government announcements threatens to erode confidence and integrity of US markets."

The CFTC investigation is a welcome start. But investigations are not prosecutions, and prosecutions are not convictions. The administration that has reduced the Public Integrity Section to two lawyers, that has terminated 159 enforcement actions, and whose SEC enforcement chief resigned in protest cannot now claim that everything is above board.

In March, both Polymarket and Kalshi announced new rules to curb insider trading. In March, a White House email warned staff to comply with the law. These are not signs of a system that is working. They are signs of a system that knows it has failed — and is trying, belatedly and inadequately, to paper over the cracks.

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## Solar cold storage helps African farmers cut losses, reach global markets

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KENYAN farmer Yvonne Anyonyi Mumiah walks in the early morning between rows of rosemary, basil and other crops destined for European supermarkets. She once worried that transport delays or extreme heat could spoil much of her harvest, but now relies on a solar-powered cold storage service to keep her produce fresh.

The pay-per-use model offered by cold-chain company SoKo Fresh charges farmers based on kilograms (pounds) stored, part of a trend in Africa toward using solar-powered cold storage to help prevent one of agriculture's most persistent problems: food spoilage.

The Food and Agriculture Organisation estimates that up to 40 per cent of food produced in Africa is lost between harvest and market, largely due to poor storage, transport, and processing infrastructure.

**Solar power can keep goods fresh for markets**

Solar-powered, off-grid cold rooms, warehouses and cooling hubs allow farmers and traders to preserve perishable goods without relying on expensive and unreliable electricity grids. This shift is gaining momentum across Kenya, Nigeria, Ethiopia, Rwanda and South Africa.

"The biggest challenge was preserving the quality after harvest," said Mumiah, who, like many other smallholder farmers, could not afford the roughly USD 30,000 upfront cost of a solar-powered cold storage unit of her own.

"You can do everything right on the farm, but if the produce is not stored properly, you lose both the product



and income," she said, noting the increased flexibility cold storage provides. "We are no longer forced to sell immediately because we fear the produce will spoil. We can wait for collection and still maintain quality." As food handling systems come under pressure from climate change, rising temperatures, and sometimes disrupting supply chains, cooling technology is increasingly vital.

**Farmers in Africa face special challenges**

In countries such as India, China, Japan, the Netherlands and the United States, sophisticated cold-chain networks allow fresh produce to remain marketable for weeks. In many parts of Africa, however, farmers often lack access to cooling facilities and must sell their crops immediately after harvest, suffering significant losses.

The challenge is increasingly acute as temperatures rise since extreme heat accelerates spoilage of vegetables, fruits, dairy products and fish. Unreliable electricity supplies make conventional refrigeration expensive or impractical in many rural areas.

"Cold storage remains one of the missing links in Africa's agricultural value chains," said Emmanuel Aziebor, regional director for Africa at CLASP, a nonprofit organisation

that supports the deployment of energy-efficient appliances and productive-use technologies. "When farmers can store produce for longer, they gain access to better markets, reduce waste and increase incomes," he said.

Solar power speeds up improvements to supply chains. Soko Fresh says it has cut spoilage rates for its customers from up to 50 per cent to under 2 per cent, while helping farmers earn up to 50 per cent more per kilogram.

In Nigeria, companies like ColdHubs have installed solar-powered walk-in cold rooms in major agricultural markets, allowing farmers and traders to rent space daily rather than invest in expensive equipment. In Rwanda, solar-powered refrigeration is being used to support dairy cooperatives and improve milk collection. In Ethiopia, cold-chain investments are expanding to support horticultural exports, one of the country's fastest-growing agricultural sectors. Analysts say such innovations are becoming increasingly important as African countries seek to improve their food security while reducing greenhouse gas emissions.

Traditional cold storage systems often depend on diesel generators, particularly in areas with unreliable elec-

tricity. Solar-powered alternatives can reduce fuel consumption and operating costs while lowering emissions.

Yet experts argue the most important benefit may be economic rather than environmental. For decades, development efforts have focused heavily on expanding electricity access across Africa. While millions of households have gained access to power, less attention has been paid to ensuring that electricity can be used to generate income.

"We have neglected the conversation around how people can turn electricity into opportunity," Aziebor said. "We keep extending electricity infrastructure, but unless people can use that power productively, the economic benefits never fully materialise."

**It goes beyond cold storage**

Across Africa, solar-powered irrigation systems are enabling year-round farming. Solar milling machines and processing equipment help rural communities add value to agricultural products closer to where they are grown.

Funding remains a challenge. "The challenge today is not demonstrating that these systems work," said Carol Koeh, vice president for Africa at the Global Energy Alliance for People and Planet. "It is building enough bankable projects that can attract larger pools of investment and scale across countries."

Grants, low-interest loans and donor support can help cover upfront costs. Industry experts say attracting sufficient commercial investment remains difficult because many agricultural markets are fragmented and dominated by small-scale producers.

## Scientists explain how meteor sonic booms can release energy equal to hundreds of tons of TNT

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AS humans, we live out our lives on a planet that is constantly sweeping through a cosmic ocean littered with ancient debris from the formation of the solar system. For the most part, our world glides silently through space, shielded by Earth's thin atmosphere.

Occasionally, however, the rest of the universe reminds us of its presence with stunning, visceral clarity.

Residents along the Massachusetts-New Hampshire border were startled by a sudden sonic boom on the afternoon of May 30, 2026. A large number of people up and down the Eastern Seaboard witnessed it. After NASA analysed imagery from weather satellites, they identified the culprit as a small meteor measuring roughly 3 to 5 feet (1 to 2 metres) across. It was screaming through space at an astonishing 42,000 miles per hour (68,000 kilometres per hour) when it plunged into earth's upper atmosphere.

Friction between the meteor and the increasingly dense air quickly turned the kinetic energy of the rock shooting through the sky into blistering heat. At an altitude of roughly 40 miles (60 kilometres), the immense heat and pressure overcame the structural integrity of the meteor, causing it to fragment in a brilliant flash.

The breakup released a staggering burst of energy equivalent to 300 tons of TNT. When an object travels through the air at speeds faster than sound, which is 761 mph (1,225 kmph), it creates a shock wave creating a thunderous clap, or sonic boom. While the majority of the rock vaporised, the remaining fragments rained down harmlessly into the waters of Cape Cod Bay. In the past, such an event might have passed as an unverified sighting in the daytime sky. Today, however, our planet is wired with an accidental network of planetary defence sensors: dashboard cameras, security systems and digital doorbells.

Because meteor entries like this one last only a few fleeting seconds, they were easily missed in the past. Now, our collective digital eyes capture these spontaneous cosmic intrusions almost instantly, bringing the universe directly into our



daily news feeds. While dramatic, these events are more common than most people imagine.

As someone who has worked as a planetarium director and astronomy educator for over four decades, I often get emails, social media messages and phone calls about such objects and sightings. While hearing a sonic boom can be a bit unsettling or even shocking, it reminds us we live in an active universe and may want to occasionally look up instead of down at our devices.

**A meteoric spring**

The Cape Cod fireball was the latest sighting in an active season of meteoritic arrivals. Just months earlier, the solar system seemed to be sending a parade of rocky objects down to Earth.

From March 8-11, observers in Northern Europe witnessed large, slow-moving fireballs in their skies. Enthusiasts and scientists successfully recovered several fragments. Lab analysis of these specimens revealed their place in a fascinating lineage — scientists determined that they had originated from Vesta, a massive, pristine asteroid orbiting between Mars and Jupiter.

On March 17, a 7-ton asteroid measuring roughly 6 feet across entered the atmosphere directly over Lake Erie. Travelling at 45,000 mph (72,400 kmph), it generated a brilliant daytime flash and a powerful sonic boom, unloading an energy equivalent to 250 tons of TNT. NASA scientists published data about its trajectory, allowing meteorite hunters to recover pristine fragments in Valley City, just a short drive from Cleveland, Ohio.

Only four days later, on March 21, another cosmic fragment blazed across the skies of Texas. This object was about 3 feet wide, and it travelled at 35,000 mph (56,300 kmph), releasing the energy of

roughly 26 tons of TNT.

Outside of Houston, homeowner Sherri James was startled by a sudden crash, only to discover a 6-inch (15-cm) hole in her roof and a small piece of the solar system resting on her floor.

**Thank goodness for earth's atmospheric shield**

The benchmark for modern atmospheric impacts is the Chelyabinsk meteor, which exploded over Russia on Feb. 15, 2013.

That object was significantly larger than any of the meteors researchers have observed in 2026, measuring 60 feet (18 m) across and weighing roughly 10,000 tons. When it shattered 18 miles (29 km) above the ground, it produced an airburst with an explosive force 30 times greater than the Hiroshima atomic bomb.

The resulting shock wave shattered glass across hundreds of square miles, injuring nearly 1,500 people and registering as a seismic event between 2.7 and 3.7 on the Richter scale. The incident was a stark reminder that while Earth's atmosphere is an incredibly effective shield, absorbing the lion's share of cosmic impacts, a large enough kinetic punch can still reach the surface below.

Despite the dramatic stories around these meteor impacts, history shows that the cosmic lottery rarely targets humans directly. In all of recorded history, there is only one universally confirmed case of a person being directly struck by a space rock. In 1954, an 8.5-pound (3.8 kg) meteorite crashed through the roof of a house in Sylacauga, Alabama, ricocheted off a heavy wooden radio and struck a sleeping woman named Ann Hodges. Though it left a severe bruise on her hip, the radio absorbed the brunt of the impact. Had it not been for the radio, there is a chance she could have been seriously injured or killed by this object.

**Living with the cosmos**

So, are you in any imminent danger from meteors? The mathematics of the cosmos provide profound reassurance. The statistical odds of being struck by a meteorite are vanishingly small. You stand a better chance of winning a multi-million-dollar lottery jackpot 10 times in a row than ever being hit by a meteorite.

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