

IRAN WAR AND INDIA'S FERTILISER CRISIS: CHALLENGES AND THE WAY FORWARD

India is facing a sharp rise in fertiliser prices due to supply disruptions triggered by the US–Israel–Iran conflict and the closure of the Strait of Hormuz, a key global energy and trade route. India's latest urea import tender by Indian Potash Limited saw prices rise to \$935–959 per tonne, nearly double the \$508–512 / tonne recorded in February by Rashtriya Chemicals and Fertilizers.

Price Rise Across Key Fertilisers

- DAP (Di-Ammonium Phosphate): Increased from ~\$680–720 to ~\$865–925 per tonne.
- Sulphur: Jumped from ~\$300–550 to ~\$900 per tonne.
- Ammonia: Rose from ~\$435 to ~\$850–900 per tonne.

Supply Chain Disruptions

- Closure of the Strait of Hormuz has restricted global shipments.
- Shutdown of facilities by Qatar Energy and Maaden due to Iranian strikes has reduced supply. India is now sourcing from alternative markets like Indonesia, Malaysia, Morocco, and Jordan.
- However, new suppliers must cater to multiple regions, including South America. This has increased competition for limited supplies, further pushing up prices.

Kharif Season Fertiliser Challenge in India Amid Supply Disruptions

- The upcoming kharif season, beginning with the southwest monsoon in June, faces a serious fertiliser supply challenge, particularly for urea.
- During this season:
 - Estimated kharif requirement: 19.4 million tonnes (mt)
 - Available stock (early April): ~5.5 mt
 - This indicates a significant shortfall ahead of peak sowing season.
- **Outlook: Kharif vs Rabi**
 - Kharif season may be managed with difficulty
 - Greater risk lies in the rabi season, where shortages could intensify

Addressing India's Fertiliser Crisis: Alternatives and Policy Options

- India's fertiliser use is heavily skewed toward a few key products:
 - Urea: ~55% share of total consumption (70–71 mt annually)
 - DAP (Di-Ammonium Phosphate): ~9–9.5 mt
 - NPKS Complex Fertilisers: ~14.2 mt
 - SSP (Single Super Phosphate): ~5–5.5 mt
- **Shift Toward Alternative Fertilisers**
 - Supply shortages—especially of ammonia—may lead to substitution with other fertilisers, such as:
 - TSP (Triple Super Phosphate): High phosphorus (46%), no nitrogen
 - MAP (Mono Ammonium Phosphate): Balanced N and P content
 - SSP: Lower phosphorus but contains sulphur
- **Proposal: Fortified Fertilisers**
 - Industry stakeholders suggest:
 - Coating urea or DAP with micronutrients (zinc, iron, boron, etc.)
 - Adding secondary nutrients (sulphur, calcium, magnesium)
 - Relaxing price controls on such fortified products
 - Benefits:
 - Improved crop yields and nutrient efficiency
 - Reduced need for separate micronutrient application
 - Greater value for farmers despite higher prices
- **Role of Biostimulants in Reducing Fertiliser Dependence**
 - Biostimulants are emerging as a sustainable alternative:
 - Derived from microbes, seaweed, and organic matter
 - Do not supply nutrients directly but enhance nutrient uptake and efficiency
 - Example: Phosphate-solubilising bacteria convert locked soil phosphorus into usable forms.

WHAT IS THE ONLINE GAMING AUTHORITY OF INDIA (OGAI)?



- It is a regulatory body established under the Promotion and Regulation of Online Gaming Act 2025.
- The authority will be a **digital office** under the **Ministry of Electronics and Information Technology (MeitY)**, Government of India. It will be operational starting May 1.
- It will act as the **central regulator for online games**, including esports, **bringing them under a formal registration and classification system**.
- The **function** of the authority will include **categorising and registering online games, deciding whether a game qualifies as a money game, and addressing public grievances**.
- It is established to **issue guidelines, codes of practice, and directions to ensure compliance**.
- It will also **coordinate with financial institutions and law enforcement agencies** to ensure effective enforcement.
- **Membership:**
 - The authority will comprise **6 members** in which the **Additional Secretary of the MeitY** will be **Chairperson**.
 - **Other five members** will include **Joint Secretaries from the Ministry of Home Affairs, Information and Broadcasting, Youth Affairs and Sports, Department of Financial Services, and Department of Legal Affairs**.

ATAL PENSION YOJANA

- It is a flagship **social security scheme** of the Government of India.



- It was **launched in 2015**, with the vision of establishing a universal social security system for all Indians.

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- It is a **voluntary, contributory pension** scheme primarily focused on the **poor, the underprivileged, and workers in the unorganized sector.**
- **Features of Atal Pension Yojana:**
 - It provides a **guaranteed monthly pension** ranging from **₹1,000 to ₹5,000** for subscribers after **attaining 60 years of age.**
 - Same pension **continues to the spouse** after the subscriber's demise.
 - The return of the corpus accumulated till the age of 60, to the **nominee after the death of both.**
 - **Age:** It is open to **all Indian citizens between the age of 18 and 40 years**, except those who are or have been income tax payers.
 - **Voluntary Exit:** Allowed, but the subscriber only receives the contribution made (with interest) and government co-contribution (if any) is forfeited.
 - It is administered by the **Pension Fund Regulatory and Development Authority (PFRDA).**

CURIOSITY ROVER



- It is a **U.S. robotic vehicle designed to explore the surface of Mars.**
- It was launched aboard an Atlas V rocket in 2011.
- It has been moving around the **Gale crater and Mount Sharp on Mars.**
- The rover is part of NASA's **Mars Science Laboratory mission** which tested a novel landing method that saw the spacecraft descend on a parachute before its landing system fired up its rockets and hovered as the rover was lowered down onto the surface.
- **Features:**
 - It **draws its electric power** from a **thermoelectric power generator**, with the heat source being the radioactive decay of plutonium and the heat sink being Mars's atmosphere.

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- According to NASA, Curiosity has four main science goals in support of the agency's Mars exploration program:
 - Determine whether **life ever arose on Mars**.
 - Characterize the **climate of Mars**.
 - Characterize the **geology of Mars**.
 - Prepare for **human exploration**.

PRIME MINISTER INTERNSHIP SCHEME



- It is a **Government of India initiative** aimed at providing **internship opportunities** to youth in top Indian companies.
- These **internships span 24 sectors**, including oil, gas, energy, travel, hospitality, automotive, banking, and financial services.
- **Financial Assistance:** Interns will receive minimum financial assistance of ₹9,000 per month.
- **Eligibility Criteria:**
 - Passed 10th, 12th, ITI, Polytechnic, or Diploma courses.
 - Fresh graduates from **non-premier institutions**.
 - Students from IITs, IIMs, National Law Universities, and individuals with professional degrees like CA, MBA, MBBS, etc., **are excluded** to promote inclusivity for underrepresented groups.
 - It provides young **individuals aged 21-25 years** from **low-income households** with **12-month internship opportunities** in the country's top 500 companies.
 - The **income of any of your family members** (self, parents, or spouse) should not exceeds ₹12 lakh in the preceding financial year
 - **No family member has a government job.**
 - **New Changes**
 - **Final-year undergraduate and postgraduate students** are now **eligible to apply** under PMIS

ESPORTS IN INDIA - GROWTH, REGULATION AND NEW ONLINE GAMING RULES

- E-sports refers to **competitive video gaming** where individuals or teams compete in organised tournaments, often for prize money and professional recognition.
- It is distinct from casual gaming due to its structured format, professional players, and spectator base.
- The esports industry in India has witnessed rapid growth over the past decade. With increasing smartphone penetration, affordable internet, and a young population, India has emerged as a key market.
- The industry is estimated to be worth over **\$1-1.5 billion**, with strong growth projections driven by streaming, sponsorships, and tournament ecosystems.
- India has also seen the rise of professional esports athletes, gaming organisations, and large-scale tournaments. Platforms such as mobile gaming have significantly contributed to this expansion.

Types of E-sports and Gaming Ecosystem

- First, **mobile esports** dominate the Indian market due to accessibility. Games like battle royale and multiplayer strategy formats fall under this category.
- Second, **PC and console esports**, which are more prevalent in global tournaments and require higher infrastructure.
- Third, **team-based competitive gaming**, where structured leagues and franchises operate.
- The ecosystem includes players, teams, tournament organisers, streaming platforms, sponsors, and audiences.
- Revenue streams include advertising, media rights, in-game purchases, and sponsorship deals.

Government Regulations and Policy Framework

- Esports has been recognised as part of **multi-sports events under the Ministry of Youth Affairs and Sports**, distinguishing it from gambling or betting activities.
- The **Promotion and Regulation of Online Gaming Act, 2025**, forms the basis of the current regulatory framework. It aims to balance innovation with user protection.
- **Key regulatory focus areas include:**
 - Ensuring user safety and preventing addiction.
 - Regulating financial transactions in gaming platforms.
 - Preventing illegal betting and gambling activities.

Key Provisions and Compliance Requirements

- The rules mandate gaming companies to implement operational and behavioural safeguards to protect users from financial and psychological harm.
- A significant provision is that **registration for esports platforms is mandatory**, while other online games may not require registration unless identified as high-risk.
- Gaming companies must also establish **grievance redressal systems**, allowing users to escalate complaints to the regulator if unresolved within a specified time.
- Banks and financial institutions are required to verify whether gaming platforms are legally permitted before enabling transactions. They must restrict services to non-compliant entities.

Approach to Regulation and Emerging Challenges

- The government has emphasised a regulation-light approach, allowing most non-risk games to operate freely without mandatory registration.
- At the same time, provisions have been included to introduce age classification systems and codes of practice in the future to address issues such as gaming addiction.
- Illegal betting platforms and offshore gaming sites continue to pose challenges. Authorities have acknowledged difficulties in regulating such platforms, especially when accessed through VPNs.

INDIAN RAILWAY TRACK MODERNISATION - BUILDING A SAFER, FASTER NETWORK

- Indian Railways is one of the largest rail networks in the world, operating **over 25,000 trains** daily, serving 20 million passengers and transporting critical commodities — coal, iron ore, steel, cement, and grains — across 1,37,000 km of tracks. The track is the very foundation of this system. Therefore, its integrity directly determines passenger safety, freight efficiency, and network reliability.

Key Modernisation Initiatives:

- **Track renewal and structural upgrades:**
 - Since 2014, approximately 55,000 km of tracks have been renewed, improving safety, ride quality and reducing maintenance frequency.
 - Around 44,000 track km of long rail panels (260 m each) have been laid — fewer joints mean smoother, safer movement.
- **Advanced inspection and flaw detection:**
 - Ultrasonic Flaw Detection (**USFD**) testing has been conducted over 36.2 lakh track km and 2.25 crore welds, identifying hidden internal cracks invisible to the naked eye.
 - This has resulted in a **90% reduction** in rail and weld failures — a paradigm shift from reactive maintenance to preventive safety management.
- **Mechanised maintenance:**
 - The track machine fleet has nearly doubled — from 748 machines in 2014 to 1,785 in 2026 — enabling faster tamping, ballast cleaning and rail grinding.
- **Supporting safety infrastructure:**
 - 17,500 km of safety fencing installed, especially on sections where speeds exceed 110 kmph, to prevent trespassing by humans and cattle.
 - 36,000 thick-web switches and 7,500 weldable CMS crossings at points and crossings for durability and smoother passage.

Outcomes and Impact:

- **Increase in speed potential:** Networks capable of higher speeds, for example, track fit for over 130 kmph rose from 6% to 23% (between 2014-15 and 2025-26), and track fit for over 110 kmph rose from 40% to 80%.
- **Improved safety outcomes:** Consequential train accidents reduced from 135 (2014–15) to 16 (2025–26), and accident rate per million train km improved from 0.11 to 0.01 - a 90% improvement.
- **Impact:** These improvements enabled semi-high-speed services like the Vande Bharat Express, reduced journey times, improved punctuality and boosted freight reliability.

Challenges:

- Shrinking maintenance windows as train frequency increases, leaving less time for track upkeep between services.
- The ballast degradation is a continuous process requiring sustained mechanised intervention.
- **Balancing** speed upgradation with structural and signalling system readiness.
- Last-mile **safety risks** such as trespassing, unmanned level crossings, and human error persist.

Way Forward:

- Continued **expansion** of the track machine fleet and USFD coverage across the remaining network.
- **Scaling** up preventive and predictive maintenance using AI-integrated TMS data.
- Extending high-speed-capable track (≥ 130 kmph) to enable broader deployment of Vande Bharat and future high-speed corridors.
- **Strengthening** safety fencing and level crossing elimination on high-density routes.
- **Upgrading** bridges and girder infrastructure in parallel with track renewal.
- Investment in **human capital** — training maintenance staff in operating and interpreting data from modern machines.