

2. Pax Silica Initiative- International Relation

India is talking about critical minerals. But do we have a plan? India has made significant international strides by joining Pax Silica (a US-led capability club) and participating in G7 critical minerals talks. These moves are aimed at countering China's dominance in the sector. However, a sharp contrast exists between India's external diplomacy and its domestic readiness, which is hampered by low exploration, extended timelines, and weak policy credibility.

About Pax Silica Initiative

Nature of Initiative- It is a US-led strategic initiative designed to secure the end-to-end silicon and AI supply chain.

Scope- The initiative covers the entire value chain, ranging from critical minerals and energy inputs to semiconductors and logistics.

Goals

Reduce Coercive Dependencies- Minimise reliance on single-source suppliers (like China) that can leverage trade for geopolitical gain.

Safeguard Capabilities- Protect materials and technologies critical for Artificial Intelligence (AI) development.

Scale Deployment- Enable trusted partners to develop and deploy advanced technologies effectively and at scale.

Issues in India's Critical Minerals Plan- India's domestic mining sector faces structural hurdles that slow down the realization of its global commitments.

1. Exploration & Project Pipeline

Low Exploration Base

Under-explored Potential- Less than 20% of India's geological potential has been explored.

State Dominance- The capacity for exploration is still heavily dominated by public agencies like the Geological Survey of India (GSI), limiting speed and innovation.

Weak Exploration Licence (EL) Incentives

No Preferential Rights- The current Exploration Licence (EL) does not guarantee the licensee a preferential right to mine what they discover.

Inadequate Reimbursement- It offers only 50% cost reimbursement capped at ₹20 crore, whereas actual exploration costs often hover around ~₹150 crore. This massive gap deters serious private explorers.

Long Project Timelines

Global Standard- The International Energy Agency (IEA) notes the global average cycle from discovery to production is 16+ years.

India's Reality- Projects in India often take even longer due to complex approval processes and frequent litigation.

2. Mining Allocation & Market Design

Auction Model Weakness

High Risk- The post-2015 auction-only concession regime creates high upfront capital risks.

Lack of Interest- This model has failed to attract serious merchant miners or "junior explorers" who specialize in finding new deposits.

Bid Distortion

a) **Overbidding-** Aggressive bidding often exceeds reserve valuations.

b) **Skewed Market-** These favors captive miners (companies mining for their own factories) who can offset mining losses through their downstream industrial profits. This hurts standalone mining companies and open-market competition.

Cancelled Pipeline Shock

- a) Mass Cancellation- Approximately 66,000 pending applications from the previous "First-Come, First-Served" regime were auto-cancelled.
- b) Impact- This policy shock has deepened investor uncertainty regarding the stability of rights in India.

3. Taxation & Federal Uncertainty

High Effective Tax Burden

Statutory Load- Even though royalties for critical minerals have been rationalized to 2–4%, other statutory levies push the effective tax rate to ~60–65% for mining firms, making operations expensive.

Federal Tax Risk

Supreme Court Ruling (2024)- The Court upheld the states' power to levy additional taxes on mineral rights, clarifying that royalty is not a tax.

Consequence- This introduces cost unpredictability and discourages companies from operationalizing new mines.

Recent Improvements by India

Despite the challenges, the government has taken specific policy steps to modernize the sector.

Area of Improvement	Details
Policy Push	The MMDR Amendment Bill, 2025 prioritised critical minerals and aimed to streamline concessions, signalling urgency for energy transition supply chains.
Private Entry	Six minerals were removed from the restricted "atomic minerals" list, legally allowing private sector participation in mining them.
Market Flexibility	Captive mines are now allowed to sell their output in the open market without caps. This improves their commercial viability and reduces market distortions.
Overseas Focus	The National Mineral Exploration Trust (NMET) has been repositioned to fund international mineral projects, strengthening India's resource diplomacy and supply security abroad.

Way Forward

To bridge the gap between diplomatic ambition and domestic execution, the following steps are recommended

Exploration Mission- Launch a time-bound exploration drive specifically for critical minerals. This should leverage private technology, satellite imagery, and geophysics through a model involving the GSI + Private Joint Ventures.

Shared Risk Model- Implement a funding model on a pari passu (equal sharing) basis. This ensures that both the Central Government and private miners share the costs and risks of exploration from the start.

Auction Redesign- Move away from the two-stage iterative bidding process to a single sealed-bid system. This would help curb irrational overbidding.

EL Incentive Upgrade- Reform the Exploration Licence to provide preferential rights or tax rebates for junior explorers to offset their losses, similar to the successful incentive frameworks in Australia and Canada.

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