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MAGAZINE NOTES

Mining's Water Reckoning: Two-Thirds of Global Mines at Risk

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ENVIRONMENT

GS3

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Mining's Water Reckoning: Two-Thirds of Global Mines at Risk

 **Down to Earth** Chapter 2 · 3 min read

Feature analysis for Down To Earth July 2026, built from verified reporting and primary data.

The clean-energy transition runs on metals, and metals run on water. A landmark audit published on **22 July 2026** by the **International Council on Mining and Metals (ICMM)** made that dependence impossible to ignore: after analysing more than **12,000 facilities across 148 countries and regions**, it found that **65.7 per cent**, nearly two-thirds, face significant water risk from stress, drought, floods, depletion or year-to-year rainfall variability. For a world racing to mine the lithium, copper and cobalt that decarbonisation demands, the report is a warning that water, not ore, may become the binding constraint.

WHAT THE AUDIT MEASURED

The ICMM study is significant because it moves beyond anecdote to a facility-level global map. It assessed physical water hazards using established metrics and identified where mining's water demand collides most sharply with the needs of farms, cities and ecosystems.

WATER RISK	SHARE OF FACILITIES AFFECTED	NOTE
Overall significant water risk	65.7 per cent	Two-thirds of the audited base
Baseline water stress	38 per cent	Most common single threat
Drought risk	27 per cent	Rising with climate change
High flood risk	14 per cent	Damages infrastructure and tailings

The report named compound water-risk hotspots in **Chile, Peru, southern Africa, northern China, central India, western Australia and the western United States**. In Chile, **85.8 per cent** of facilities face high baseline water stress, more than double the global average, a stark illustration of how mineral wealth and water scarcity often occupy the same ground.

WHY CENTRAL INDIA MATTERS

The inclusion of **central India** as a hotspot is directly relevant to Indian policy. The country's mineral belt across Chhattisgarh, Jharkhand, Odisha and Madhya Pradesh overlaps with forested, tribal and water-stressed districts. Coal, iron ore and bauxite extraction here competes with agriculture and drinking-water

needs, and mine dewatering can lower local water tables. As India expands **critical mineral** mining to feed its own energy transition and reduce import dependence, the same water constraint the ICMM flags globally applies at home.

THE TRANSITION PARADOX

Herein lies the central paradox the feature draws out: the metals essential to solar panels, wind turbines, electric-vehicle batteries and grid storage are extracted through some of the most water-intensive industrial processes on earth. Copper and lithium in particular are often found in arid regions where every litre is contested. The ICMM itself concluded that **competition for water** between mining and other industrial and domestic users is the single greatest physical water risk facing the sector. A disorderly transition that ignores this could trade a climate crisis for a water crisis in mineral-rich regions.

GOVERNANCE IMPLICATIONS

For India, the policy toolkit is well defined even if implementation lags. Robust **Environmental Impact Assessment (EIA)** with genuine water-balance studies, enforcement of **zero-liquid-discharge** norms, mandatory water recycling in beneficiation, and community consent under the **Forest Rights Act, 2006** and **PESA, 1996** are the levers. The **District Mineral Foundation (DMF)**, funded by mining royalties, can finance watershed restoration in affected districts. Internationally, the report strengthens the case for embedding water stewardship into critical-mineral supply-chain standards.

Way forward: treat water as a material risk in mine approvals, not an afterthought; publish facility-level water-risk disclosures; and align India's **National Critical Mineral Mission** with basin-level water planning so that mineral security does not undercut water security.

UPSC ANGLE

This is a **GS3** anchor topic linking mineral resources, water security, environmental regulation and the energy transition. Prelims-ready facts: the ICMM audit covered **148 countries** and found **65.7 per cent** of facilities at water risk, with baseline water stress affecting **38 per cent**. For Mains, use central India's hotspot status to argue that India's critical-mineral ambitions must be paired with enforceable water and forest safeguards, connecting **GS3** environment with **GS2** tribal-rights governance.



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