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GOVERNMENT OF TRIPURA
DEPARTMENT OF INDUSTRIES & COMMERCE
KHEJURBAGAN, AGARTALA

F.NO.II-1(22)/GEO/DI/TSMMP/2025/14427 **Dated, the 08th August, 2025**

NOTIFICATION

In exercise of power conferred by section 15 of the Mines and Minerals (Regulation and Development) Act, 1957 (Central Act 67 of 1957) the Government of Tripura is pleased to make the following Policy regulating the grant of mining leases and other concessions in respect of minor minerals in the State of Tripura and for the purpose connected therewith.

The Policy maybe called Tripura State Minor Mineral Policy, 2025 and this policy shall come into force from the date of its publication in the Official Gazette.

(Kiran Gitte, IAS)
Secretary to the Govt. of Tripura
Industry &Commerce Department

1. Introduction and Context

The **State of Tripura**, through its **Department of Industries and Commerce**, functioning as the **Nodal Agency(under the Rules of Executive Business I& C)**, is in the process of formulating a **Five-Year Minor Mineral Policy** (2025–2030) to guide the **sustainable, inclusive, and economically viable development** of its minor and major mineral resources. This policy will serve as a strategic roadmap to unlock the untapped potential of Tripura's mineral sector, ensuring that resource extraction contributes meaningfully to **state growth, industrialization, employment generation**, and **ecological balance**.

Tripura will notify a **"Tripura State Mineral Trust"** in exercise of powers conferred by clause (g) of subsection 1(A) of Section 15 of the Mines & Minerals (Development & Regulation) Act 1957, a Central Act, for constituting a Trust for funding exploration activities for Minor Minerals.

Current Status of the Mining Sector in Tripura

Tripura's mining sector remains **relatively underdeveloped**, contributing **around 10% to the Gross State Value Added (GSVA)** and employing a modest proportion of the workforce. The state is primarily endowed with **minor minerals** such as sand, stone aggregates, clay, and laterite, which are vital for infrastructure development and local industries like brick kilns, road construction, and civil works.

Despite its small base, the sector has demonstrated **remarkable dynamism over the past decade**. As per official data, **mining and quarrying activities recorded the highest GSVA growth rate among all economic sectors**, reflecting the **growing demand**, **investment interest**, and **policy attention** directed toward mineral resource development in the state. This performance highlights the sector's latent capacity to support both **economic diversification** and **rural development**, especially in mineral-bearing districts.

Stratcgic Alignmcnt with Statc and National Prioritics

The Tripura Mineral Policy is designed to be **mutually reinforcing** with broader state development objectives, as enshrined in:

- The **Tripura Industrial Investment Promotion Policy**
- The **Tripura Economic Review**
- The **Tripura SDG Vision Document**

These documents underscore the need for sustainable, inclusive, and green industrial development. Mining, when done responsibly, can act as a **catalyst for industrial infrastructure**, **local entrepreneurship**, **self-employment**, and **value chain development** in allied sectors like construction, ceramics, and transport.

At the national level, the policy is aligned with key frameworks and initiatives, including:

- **Atmanirbhar Bharat (Self-Reliant India)**: Enabling local resource-based industries to reduce dependence on imported raw materials.
- **Make in India** and **Ease of Doing Business**: Promoting an investor-friendly environment for responsible mining enterprises.
- **Sustainable Development Goals (SDGs)**: Especially Goals 8 (Decent Work & Economic Growth), 9 (Industry, Innovation & Infrastructure), 12 (Responsible Consumption and Production), and 15 (Life on Land).

Policy Vision

The vision of the policy is to **transform Tripura's mineral sector** into a:

"Scientifically managed, environmentally sustainable, socially inclusive, and economically productive driver of regional development and industrialization."

Guiding Principles

1. **Sustainability**: Ensurc that all mincral dcvclopmcnt activitics arc aligned with environmental regulations, biodiversity conservation, and land-usc planning.

2. **Transparency and Good Governance**: Institutionalize auction-based block allocation, digital monitoring, and public disclosures to ensure accountability.
3. **Community-Centric Development**: Promote mining that creates shared value for local communities through employment, skill development, and DMF investments.
4. **Scientific Resource Management**: Emphasize data-driven exploration, GIS mapping, and periodic resource estimation to prevent overexploitation.
5. **Value Addition and Industry Linkage**: Encourage downstream processing, use of local materials in construction, and the setting up of mineral-based MSMEs.

With this policy, Tripura aspires to:

- **Formalize and upgrade existing informal operations** into regulated mining activities.
- **Enhance resource efficiency** through geospatial technologies and digital governance tools.
- **Leverage public-private partnerships (PPPs)** for sustainable mining and infrastructure development.
- **Empower communities and tribal populations** in mining regions through equitable benefit sharing.
- **Attract responsible investments** in mineral exploration, processing, and manufacturing.

2. Vision and Objectives

2.1 Vision: To achieve sustainable and scientific exploration of Tripura's mineral resources for the inclusive growth of the state, ensuring that mining activities contribute to value addition and employment within the state, are

conducted with utmost regard for environmental protection and are governed transparently for optimal revenue generation.

2.2 Policy Objectives: The Tripura State Minor Mineral Policy aims to ensure the sustainable and responsible development of the state's mineral resources. The key objectives are:

2.2.1 Scientific and Sustainable Mining

Ensure that all mining and quarrying operations in Tripura are conducted using modern, scientific methods that prioritize sustainability, reduce environmental degradation, and optimize resource utilization.

2.2.2 Comprehensive Mineral Exploration

Promote systematic, data-driven, and advanced exploration techniques for accurate estimation of mineral reserves, involving both government and private agencies.

2.2.3 Regulation of Unscientific Practices

Eliminate unauthorized and environmentally damaging mining by enforcing strict regulatory mechanisms, standardized procedures, and periodic monitoring.

2.2.4 Local Value Addition

Encourage in-state processing, beneficiation, and value addition of minerals to catalyse industrial development and retain economic benefits within Tripura.

2.2.5 Employment Generation and Community Welfare

Leverage mining as a tool for inclusive growth by creating local employment, enhancing skill development, and investing in the welfare of communities affected by mining activities.

2.2.6 Environmental Protection and Scientific Mine Closure

Enforce robust environmental safeguards during the mining lifecycle and ensure scientifically planned mine closure, including post-mining land reclamation and ecological restoration.

2.2.7 Revenue Optimization and Governance Transparency

Maximize state revenues through efficient mineral concession management, fair royalty structures, and transparent governance to prevent illegal mining and revenue leakage.

2.2.8 Promotion of Exploration and Resource Discovery

Scale up mineral exploration using cutting-edge geoscientific tools and technologies, supported by both public and private investment, to unlock Tripura's untapped mineral potential.

2.2.9 Integrated Geological Mapping and Data Management

Undertake detailed geological and geophysical surveys across the state and develop a centralized, digitized database to support planning, investment, and decision-making.

2.2.10 Inter-Sectoral Linkages and Industrial Integration

Foster strategic linkages between mining, mineral-based industries, infrastructure, and energy sectors to build integrated and resilient industrial ecosystems.

2.2.11 Investment Promotion and Industrial Growth

Create an investor-friendly environment by simplifying procedures, offering incentives, and promoting Tripura as a viable destination for mining and mineral-based industries.

2.2.12 Research, Innovation, and Technology Adoption

Facilitate R&D collaborations and technology infusion to improve mining efficiency, safety, environmental management, and competitiveness of the mineral sector.

2.2.13 Human Capital Development

Strengthen institutional capacity and vocational training to meet the skilled manpower demands of the mining and mineral industries.

2.2.14 Environmental Stewardship and Compliance

Mandate environmental impact assessments, real-time monitoring, and adoption of best environmental practices to ensure compliance and ecological balance.

2.2.15 Occupational Safety and Health Standards

Uphold high standards of occupational health and safety for mine workers and surrounding communities through strict enforcement of legal and procedural safeguards.

2.2.16 Digitized Mineral Resource Information System

Develop and maintain a dynamic, GIS-enabled mineral information system for both major and minor minerals to support transparency, planning, and investor access.

2.2.17 Development of Geo-tourism

Identify and conserve geologically significant landscapes and promote geo-tourism as a sustainable and educational sector aligned with conservation goals.

2.2.18 Private Sector Participation

Proactively involve private sector entities across the mining value chain—from exploration and mining to infrastructure and processing—under a clear and investor-friendly regulatory framework.

2.2.19 Foreign Direct Investment (FDI) Facilitation

Align state-level policies with national frameworks to attract FDI in mining, exploration, and mineral processing, enabling technology transfer, capital infusion, and international best practices.

2.2.20 Protection of Stakeholder Rights

Safeguard the legal and economic rights of all stakeholders—including landowners, miners, leaseholders, and local communities—through equitable policies, grievance redressal mechanisms, and participatory governance.

This policy document provides a comprehensive framework under each of these areas, along with an assessment of Tripura's mineral endowment and a comparison with best practices from other regions.

3. Mincral Rcsourcc Profilc of Tripura

Tripura is not traditionally known as a mining-intensive state, but it possesses a diverse mineral resource base that offers significant opportunities if developed judiciously. Tripura hosts significant minor mineral deposits:

3.1 Regional Mapping of Mineral Deposits

3.1.1Limestone :TheSakhan-Jampuibeltholds990,000tonnesoflow-gradelimestone(1.93–2.2g/cm³), primarilyusedinlime-pozzolanamixesforruralconstruction.Depositslackthepurityfor cement production but support small-scale lime kilns .

3.1.2Glass Sand:High-purity silica sand (98% SiO_2) clusters in Bishramganj (160,000 tonnes) and Mohanpur (97,875 tonnes), supplying Agartala'sglassware industry. Total reserves: 362,832 tonnes across six zones.

3.1.3Plastic Clay:1.73 million tonncs of high-plasticity clay (1.63–2.6 g/cm³) are distributed in four zones:

- Mohanpur-Bamutia-Kamalghat (West Tripura)
- Bishramganj-Bagma (South Tripura)

Used for sanitary ware, electric insulators, and refractory bricks .

3.1.4Sandstonc/Hard Rock:Jampui Hills' sandstonc (2.1–2.76 g/cm³) is quarried for road metal and aggregates. Reserves in Longatarai Hills support localinfrastructurc projccts .

3.1.5Glass-grade Sand (Silica): Substantial deposits of high-silica sand (≈98% SiO_2) occur along certain stream banks. For example, white sand deposits along the Bijai river near Bisramganj are estimated at ~160,000 tonnes and near Old Agartala about 50,000 tonnes. These high-quality silica sands are suitable for glass manufacture. Indeed, a small glass factory was established at Arundhutinagar (near Agartala) utilizing local sand. This indicates scope for reviving and expanding glassware or glass fibre industries using local raw material.

3.1.5Clay (Plastic and Fire Clay): Tripura has multiple clay deposits. White plastic clays (suitablc for ccramics) arc found ncar Agartala, Dharmanagar and Bisramganj. Notably, grey and white plastic clays have been identified at Paschim Champamura (rcscrvcs ~914 tonncs of grcy clay) and Ranir Bazar (≈20,000 tonnes) among other locations. High-grade fireclay (non-plastic, >37% alumina) is also rcportcd in arcas likc Amtali, Mohanpur, Latiachcrra and others around Agartala, with an estimated 295,000 tonnes of possible reserves. These clays can support industries such as brick manufacturing, tile and ceramic production and refractory material for steel and glass plants.

3.1.7Lignite: Small occurrences of lignite (brown coal) have been noted in north and south Tripura – for instance, pyrite-bearing lignite is reported on the western flank of the Unkoti hills near Kumarghat and at Betaga and Sabrum. These seams are of non-coking variety and limited scale, so while not viable for large-scale coal mining, they point to the state's varied geology. Any lignite extracted could potentially be used in local brick kilns or small power generation if found in feasible quantities.

3.1.8Limestone: Sporadic occurrences of siliceous, occasionally fossiliferous limestone have been reported in the Sakhan and Jampui hill ranges of Tripura. These limestone pockets are not currently mined, but if further

exploration proves sufficient quantity and quality, they could support small-scale lime production or serve as blending material for cement plants in the region.

3.1.9Building Stone and Road Material: The state's terrain (partly hilly with lateritic formations) provides materials for construction. Shale deposits in the Atharamura range, for example, can be used to manufacture clay-cement nodules or as road metal. Lateritic gravel (moorum) with quartz pebbles is extensively quarried for road construction. A tough calcareous sandstone found at Gagrachara is also used as road metal. These minor minerals (sand, sandstone, shale, gravel) form the backbone of local construction material supply and are governed by the Tripura Minor Mineral Concession Rules, 2014, which regulate quarrying leases and permits.

Overall, Tripura's mineral profile is a range of minor minerals that include silica sand, clay and stone. The policy's first step is to thoroughly assess and periodically update the inventory of these resources. This will be done in collaboration with the Geological Survey of India (GSI) and other expert agencies, including digitization of geological data and resource maps for Tripura. By identifying potential regions – for instance, clay belts near West Tripura and Dhalai, or sand deposits along major rivers – the state can focus its development and conservation efforts where they are most effective.

4 .Sustainable and Scientific Mining

4.1 Scientific Mining Practices

The policy mandates that all mining and drilling activities (whether for hydrocarbons or solid minerals) adopt scientific methods and state-of-the-art technology. Mine lease holders will be required to prepare and implement **Mining Plans** with detailed geological studies, efficient mine design and safety management plans, certified by qualified professionals. Emphasis will be on maximizing resource recovery while minimizing waste and land degradation. For example, in open quarries for brick clay or road metal, systematic benching, proper haul roads and phased extraction will be enforced instead of haphazard digging. In the gas sector, operators must use

advanced techniques (like directional drilling and reservoir management) to avoid blowouts and gas leakage, ensuring extraction is efficient and safe.

4.2Capacity Building

The Mines& Minerals Division Under Industry Department will facilitate training programs to build technical capacity among miners (including small quarry operators). Workshops on scientific mining methods, handling of explosives and use of modern machinery will be conducted, possibly in partnership with institutions like the Indian Bureau of Mines (IBM) or mining institutes. This will help even small-scale operations in Tripura (such as sand mining cooperatives or clay pit owners) improve their practices in line with scientific norms.

4.3 Mine Safety and Health

A key aspect of scientific mining is protecting workers' health and safety. The policy will enforce all provisions of the Mines Act and relevant regulations – even for small quarries – including use of personal protective equipment, proper mine lighting and ventilation and regular safety inspections. Tripura will coordinate with the Directorate General of Mines Safety (DGMS) to conduct periodic safety audits. Any violation of safety standards or incidents will be investigated, and operations may be suspended if found negligent. The goal is zero fatalities or serious accidents in Tripura's mining sector over the policy period.

4.4 Technology for Monitoring

To ensure compliance with scientific and sustainable practices, the state will leverage technology for monitoring. Remote sensing and GIS-based tools will be deployed to track active mining sites. Tripura will integrate with the national **Mining Surveillance System (MSS)** – a satellite-based monitoring system that flags unusual land use changes around mining areas to detect illegal or unscientific mining. This system, operational since 2016, has proven effective in alerting authorities to unauthorized mining by analysing satellite imagery up to 500m around minespib.gov.in. Its advantages include quicker response, unbiased detection and even a mobile app for public to report issues.

4.5 Sustainability Measures

Sustainable mining implies that current extraction does not deprive future generations of the resource or a healthy environment. Tripura will require mining projects to implement sustainable development frameworks as per national guidelines (such as the Ministry of Mines' Sustainable Development Framework for the mining sector). This includes efficient water use (recycling water in clay washing or using rainwater for dust suppression), energy-efficient operations (using gas or solar power in mines where possible) and waste reduction (like reusing overburden for backfilling). The policy encourages cluster mining approach for minor minerals – instead of many scattered small pits, contiguous resources should be planned as a cluster and worked cooperatively. This allows better infrastructural support (roads, drainage, safety) and rehabilitation of a larger area in a scientific manner, rather than many abandoned pits.

By enforcing scientific, well-planned mining methods, Tripura aims to prevent the environmental damage and resource sterilization that often accompany unregulated extraction. The outcome will be a mining sector that is productive yet respectful of people and nature, in line with the state's sustainable development commitments.

5. Value Addition and Industrial Development

One of the core thrusts of this policy is to ensure that minerals extracted in Tripura are processed and utilized within the state to the maximum extent feasible, thereby creating value addition and industrial growth locally. Rather than exporting raw minerals and importing finished products, the state will promote industries that use local mineral inputs – generating employment, revenues and self-reliance.

5.1 Mineral-Based Manufacturing

For solid minerals like clay and silica, the policy proposes dedicated industrial zones or parks. A "Ceramic Park" could be developed near major clay deposits (e.g. west Tripura) where cluster facilities (common slurry

tanks, kilns, testing labs) are provided for pottery, sanitaryware, tile and brick manufacturers. This cluster approach will improve economics of scale and product quality. Likewise, if viable, a glass and silica products center can be explored – reviving the glassware unit near Agartala and potentially attracting investors in glass bottle manufacturing or fibre glass who can utilize the high-grade silica sand (98% silica) available in the state. The policy will facilitate technology partnerships to improve these industries – for example, bringing in expertise from established ceramic hubs or through central institutes like CGCRI for glass/ceramics.

5.3 Incentives for Value Addition

To ensure minerals are not exported without processing, the state may introduce differential royalty or cess regimes – higher levies on the transport of raw minerals outside the state and rebates for minerals sold to local processing units. For instance, a quarry producing silica sand will pay a lower royalty if the sand is sold to a local glass/ceramic factory as opposed to raw export.

The Tripura government will also use its Industrial Policy incentives (like transport subsidies, power tariff rebates, etc.) to specifically benefit mineral-based industries. Tripura's new industrial policy already provides transport subsidies and other support to make local manufacturing competitive; this will be tailored to heavy mineral-based goods which often face high logistics costs to distant markets.

5.4 Infrastructure and Market Linkages

The success of local value addition depends on good infrastructure. The policy calls for improving connectivity from mining areas to processing centers – building or upgrading road links (especially from interior clay pits or stone quarries to highways). It also encourages developing logistics hubs or rail freight facilities for bulk transport of materials and finished products, possibly in collaboration with Bangladesh for access to seaports given Tripura's location. Furthermore, the state will facilitate marketing of

Tripura's mineral-based products by showcasing them in trade fairs and seeking preferential procurement.

For example, locally made bricks, tiles or cement (if a mini-cement plant were set up using local limestone in future) should be used in state government construction projects as far as possible, to create assured local demand.

By pursuing these strategies, Tripura aims to transform from a mere raw material supplier into a mineral-based manufacturing economy. This aligns with the "Make in India" vision and will contribute to Tripura's goal of inclusive industrial growth. Other states (like Rajasthan) have demonstrated that creating a favourable environment for value addition and downstream industries can enhance employment and the state's income. Tripura's policy, therefore, places local value addition at its core, ensuring the state's minerals catalyse home-grown industries and jobs.

6. Local Employment and Community Development

Harnessing Tripura's mineral wealth for local benefit is a fundamental principle of this policy. The communities living in and around mining areas must be primary stakeholders in the mining-induced growth. To this end, the policy mandates measures to boost local employment, ensure skill development and invest in community development projects.

6.1 Employment of Local Youth

All mineral concession holders (whether public sector like ONGC or private lessees of minor minerals) will be required to prioritize employment for people from Tripura, especially those from the district where the project is located. The government will set indicative targets (for example, at least 75% of unskilled and 50% of skilled jobs in a mining project should go to local residents) and monitor compliance. In the case of specialized skills not available locally, companies must implement training programs to build those skills in the local workforce over time.

For instance, if an exploration company brings in drilling experts from outside initially, they should arrange apprenticeship for local engineering graduates so that within a few years those roles can be localized. The overarching aim is to ensure the mineral sector becomes a source of decent employment for Tripura's youth, in line with SDG 8 (decent work and economic growth).

6.2 Skill Development

The policy will facilitate the creation of training centers in mining-affected regions. In collaboration with the Skill Development Mission, ITIs and polytechnics in Tripura will introduce trades related to mining (such as welding and machinery maintenance for mining equipment, geological survey assistant, safety officer courses, etc.). Short-term skill camps can also be organized in villages near quarries – e.g. training local women and men in brickmaking, stone carving, or driving excavators and heavy vehicles used in mining. By upgrading the skill base, locals can take up not just labor jobs but also technical and supervisory roles in mining projects.

6.3 District Mineral Foundation (DMF)

Tripura will operationalize District Mineral Foundations in any district where significant mining or drilling occurs, as per the Mines and Minerals (Development & Regulation) Act. The DMF is a statutory trust that will receive a percentage of royalty from mining operations, to be spent on the welfare of people in mining areas. While Tripura's current royalty collection (especially from minor minerals) is modest, the DMF mechanism ensures even small contributions are earmarked for local benefit. Funds from DMFs will be invested in projects like healthcare facilities in mining belts, safe drinking water supply, improving local schools, livelihood training (beyond mining, to reduce dependency) and infrastructure like roads and community centers.

The Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY) guidelines will be followed to allocate DMF funds in a way that addresses the specific needs of affected communities – whether it is treating illnesses related to mining

(silicosis prevention for stone quarry workers, for example), or providing scholarships to children in those areas.

6.4 Community Engagement and Consent

The policy stresses the importance of obtaining social license to operate. Local communities must be consulted and informed at every stage – from exploration surveys to mine closure. For major projects, especially involving land acquisition or displacement, a robust Grievance Redressal Mechanism will be put in place by the project proponent in consultation with the district authorities. Periodic community meetings should be held to report on mining impacts and gather feedback.

Tripura will ensure compliance with central laws like the PESA Act (where applicable in tribal areas) and Forest Rights Act, securing consent of Gram Sabhas for projects on community lands. Benefit-sharing models will be promoted – for instance, encouraging mining companies to take up local area development as part of their Corporate Social Responsibility (CSR), or even offering equity shares to local community trusts in large projects as practiced in some international models for community empowerment.

6.5 Equitable Benefit Sharing

Learning from best practices in other mining regions, Tripura's policy advocates ***"benefits to locals first."*** This could include providing local residents with subsidized supply of the mined material for their own use (e.g. villagers near a stone quarry getting free or discounted stones for building homes or roads). In hydrocarbon-rich areas, there could be schemes for nearby villages to get domestic gas connections or electricity at lower rates as a direct dividend of the gas extraction. The ***equitable sharing of benefits with communities affected by mining*** is essential for maintaining trust.

The policy therefore ensures that mining contributes to improving the Human Development Index of mining areas – turning mineral wealth into a **"lifeline for development"** rather than a source of strife.

Through these measures, Tripura aims to foster a harmonious relationship between mining projects and local communities. The true success of mineral development will be measured not just in tonnes or revenue, but in how much it improves the quality of life for people at the grassroots.

7. Environmental Protection and Mine Closure

Protecting Tripura's rich forested hills, biodiversity and clean water resources is a non-negotiable aspect of this mineral policy. The state is committed to sustainable mining that rigorously safeguards the environment during operations and fully rehabilitates mine sites after closure, in line with national environmental laws and global best practices.

7.1 Environmental Clearances

All mining projects, regardless of size, must comply with the environmental clearance process as per the Environmental Impact Assessment (EIA) Notification. The policy will ensure that even smaller quarries undergo a simplified environmental assessment with appropriate mitigation plans. For bigger projects (like extensive earth excavation or any future coal/gas development), a comprehensive EIA study will be mandatory, covering impacts on land, water, air, forests and local livelihoods. Public hearings will be conducted transparently, and environmental management plans (EMP) must be approved by the State Pollution Control Board. Consent conditions – such as limits on noise, dust, vibrations and water usage – will be strictly enforced.

The Mines will work closely with the Industry Department and Department of Environment & Forests to monitor compliance. Any violation (e.g. mining outside lease boundaries, dumping of waste in rivers, or failure of pollution controls) will invite penalties, suspension of operations, or cancellation of lease.

7.2 Pollution Control Measures

Mining operators are required to implement on-site pollution control. This includes installing dust suppression systems (like water spraying on haul

roads and at crusher units), proper storage and treatment of mineral rejects and waste (to prevent runoff into water bodies) and safe disposal of drilling mud or oil in the case of hydrocarbon wells. Water pumped from mines (mine sump water) must be treated and reused for irrigation or dust control, not released untreated.

The policy also encourages progressive adoption of renewable energy in mining operations – for example, using solar power for lighting in mines and camps, or using the mines' overburden to create noise and dust barriers with green cover.

7.3 Biodiversity Conservation

Many potential mining areas in Tripura are near forested or ecologically sensitive zones. The policy makes it compulsory to avoid **Protected Areas** (national parks, wildlife sanctuaries) and their eco-sensitive buffers for any mining or drilling. If mining is proposed in forest land, legal forest clearance under the Forest (Conservation) Act is required and compensatory afforestation will be carried out on at least double the affected area.

Department will maintain an inventory of such ecological considerations and ensure mine planning incorporates wildlife protection measures (such as creating migration corridors or safe zones away from blasting sites). Indigenous tree species must be planted along the periphery of mines to create green belts. Ultimately, the aim is *"no net loss"* of biodiversity – any habitat disturbed by mining should be restored or compensated by habitat improvement elsewhere.

7.4 Mine Closure Plan

Every mining lease in Tripura will include a Mine Closure Plan at the outset, as a binding part of the permit. This plan details how the site will be rehabilitated both during (progressive closure) and after mining (final closure). Mine closure activities will include backfilling of pits, contouring of the land to a stable form, top-soil replacement and revegetation with native plants. The policy requires that progressive rehabilitation keeps pace with mining – for example, as soon as one section of a clay quarry is exhausted, it

should be backfilled and planted even while extraction moves to the next section. Companies must provide a Financial Assurance (bond) upfront (or annual contributions to a Mine Reclamation Fund) to cover the cost of reclamation.

This ensures that even if a miner defaults or abandons a site, funds are available to the government to restore the land. International best practices suggest aiming for at least 85% of original vegetation cover to be re-established by the time of closure, with companies doing continuous rehabilitation as mining progresses. Tripura will aspire to such standards, adapting them to local conditions.

7.5 Post-Closure Land Use

The policy encourages transforming closed mine sites into useful assets for the community and environment. Depending on the location, a reclaimed mine could be converted into a water reservoir (if pits are deep and can collect rainwater), which in turn can support irrigation or fishery for locals. Other sites could be afforested and handed over to the department or turned into parks, playgrounds or even solar farms (utilizing cleared land for clean energy). For instance, an exhausted laterite or gravel quarry could become a rainwater harvesting lake benefiting nearby farmers. All such repurposing will be planned in consultation with local authorities and communities *before* mine closure, so that the transition is smooth.

7.6 Monitoring and Compliance

Tripura will constitute a special **Mining Environmental Cell** within the Industry Department, staffed with environmental engineers or geologists, to oversee implementation of environmental safeguards and mine closure. This cell will conduct regular site inspections, verify annual environmental audit reports submitted by miners and coordinate with the central IBM which rates mines on sustainable practices. Adopting systems like the *Star Rating* program for mines (which assesses mines on parameters like scientific mining, environmental performance and social responsibility) will be encouraged to instil a spirit of competition in compliance. Mines with

exemplary records in reclamation and pollution control may be rewarded with public recognition or incentives (like priority in future lease allocations), whereas poor performers will face corrective actions.

By enforcing these environmental and closure protocols, Tripura seeks to ensure that mining does not scar its landscapes or communities. Each mine's legacy should ultimately be a **rehabilitated land** and a better community infrastructure, aligning with the principle of inter-generational equity and the Sustainable Development Goals (such as SDG 15 – Life on Land).

7.7 Revenue Optimization and Transparency

Efficient management of the mineral sector can significantly contribute to Tripura's revenues, which in turn fund development. This policy envisions a transparent, technology-driven governance framework to **optimize revenue** from mining while eliminating corruption and leakages.

7.8 Fair and Transparent Allocation

Tripura will allocate mineral concessions (leases and licenses) through competitive and transparent means. For major minerals or large deposits, the state will adopt e-auctions as per the MMDR Amendment Act 2015 – ensuring that mineral rights are awarded to those who offer the highest share or premium to the government, thereby capturing the true economic rent for the state. Other states have successfully used e-auctions to increase transparency and revenue; for instance, Karnataka's iron ore e-auctions post-2014 helped fetch fair market value and curb discretion. For minor minerals (like small quarry leases), a simpler competitive bidding or lottery system with clear criteria will be used in place of arbitrary allotment. All auction notices, bidding results and lease details will be published on the Department's website for public information.

7.9 Royalty and Tax Efficiency

The Mines and Mineralsdivision under IndustryDepartment will strengthen systems to ensure accurate measurement of mineral production and thus

accurate royalty calculation. Weighbridges with digital output and CCTV will be installed at major mining sites and checkpoints. An **integrated e-Governance platform** (similar to Odisha's i3MS) will be implemented – where every permit, transit pass, royalty payment and mineral transport route is recorded online in real-time. This will reduce manual intervention and opportunities for under-reporting. By plugging revenue leakages (such as illegal trucking of sand or under-grading of extracted materials), Tripura can optimize its royalty income. The policy also calls for periodic revision of royalty rates (in line with central government schedules) and strict collection of surface rent, dead rent and other applicable fees from leaseholders. **Penal provisions** will be applied on any detected evasion: defaulters may face fines multiple times the evaded amount and risk cancellation of lease for repeat offenses.

7.10 Ease of Doing Business in Mining

Streamlining and transparency go hand in hand to also improve the ease of doing business. Tripura will establish a **single-window clearance system** for mining projects, integrating departments like Mines, Forest, Environment, Revenue and Land. Investors will have a single online portal to apply and track the status of all necessary clearances and permits.

The Industrial Investment Policy 2024 highlights Tripura's investor-friendly administration and ease of doing business initiatives – the mineral policy will extend these to the mining sector. Timelines will be defined for each approval (for example, a quarry permit decision within 30 days of application if all documents are in order). If permits are delayed beyond the stipulated time without valid reason, there may be provisions for deemed approval or escalation to higher authorities. This not only encourages legitimate investment in mining and exploration but also reduces the bureaucratic red tape that can breed rent-seeking.

7.11 Curbing Illegal Mining

As a forested border state, Tripura must remain vigilant against illegal mining or cross-border mineral smuggling. The policy equips authorities

with modern surveillance tools and community partnerships to combat this. The aforementioned **Mining Surveillance System (MSS)** using satellite imagery will be a key tool – any unusual excavation detected by satellites will trigger an alert for ground verification.

Additionally, drone-based monitoring will be introduced for sand mining in rivers and larger excavation sites, as already adopted in states like Odisha. Check-posts at critical transit points (roads leading out of mining zones, state borders) will be strengthened with RFID tagging of mineral transport vehicles and surprise inspections. The public will be encouraged to report illegal mining through a dedicated helpline or mobile app (leveraging the MSS public interface), with the promise of keeping the informant's identity confidential and possibly a small reward for credible information.

7.12 Legal provisions under Section 23(C) of the MMDR Act

It allow states to frame policy to prevent illegal mining. Tripura will review its existing rules and update them to provide for seizure of minerals/vehicles involved in illegal mining and stringent penalties (including imprisonment for serious offences). Fast-track courts may be designated for trial of mining offences to ensure quick deterrence. By curbing illegal extraction and sales, the state will not only protect its environment but also ensure that due revenues reach the state exchequer rather than black markets.

7.13 Transparency and Public Accountability

Following international transparency norms, Tripura commits to open data and accountability in the mineral sector. The policy supports publishing annual reports of the Department of Industries with details of leases granted, production, royalties and DMF collections and how those funds were used. Adopting principles of the Extractive Industries Transparency Initiative (EITI) – the global standard for openness in oil, gas and mining – can guide Tripura's efforts. EITI emphasizes multi-stakeholder oversight and disclosure to empower public debate on resource management. While India is not formally an EITI member, Tripura can voluntarily implement its spirit by forming a State-level Mining Advisory Committee that includes

government, industry and civil society representatives. This committee can oversee that auction processes, royalty distributions and community fund utilizations are all done fairly and report any irregularities. Procurement in the department- mining (for example, hiring of contractors for exploration or reclamation) will be made e-tender based and transparent.

Furthermore, the state will implement a Grievance Portal for mining-related issues where citizens can lodge complaints (e.g. illegal mining incidents, pollution from a mine, or corruption allegations). Each complaint will be time-bound for investigation by the department. Regular audits will be conducted, possibly inviting independent experts or CAG audits, to review if mining revenues are being assessed and spent as per rules.

By maximizing legitimate revenue and ensuring those revenues are transparently managed, Tripura can channel more funds into development projects (including the community development initiatives via DMF). This reinforces the trust of citizens and investors, creating a virtuous cycle of compliance and growth in the sector.

8. Promotion of Mineral Exploration

Unlocking Tripura's mineral potential requires a proactive approach to exploration. Much of the state's geology remains under-explored, especially for solid minerals, due to historical focus on hydrocarbons. This policy prioritizes systematic exploration to identify new mineral resources in a scientific and time-bound manner, in partnership with various agencies and the private sector.

8.1 Geological Data and Mapping

As a first step, all existing geological information on Tripura will be consolidated and digitized. This includes data from GSI's regional surveys, ONGC's seismic and drilling data for oil/gas and any academic or departmental studies. A comprehensive Geological GIS Database for Tripura will be created, mapping out rock types, known mineral occurrences, geochemical anomalies and geophysical survey results. The state will

request GSI to intensify baseline surveys – such as aeromagnetic or radiometric surveys – especially in the hilly terrains which might conceal deposits of coal, metallic minerals, or industrial minerals.

Regions like the Jampui and Atharamura ranges, given their limestone and shale indications, could be surveyed in detail for resources like limestone, base metals, or rare minerals. The policy proposes collaboration with the National Geoscience Data Repository so that Tripura's data is integrated into national platforms and made accessible to prospective explorers.

8.2 Partnership with Exploration Agencies

Recognizing that state capacity is limited, Tripura will invite agencies like the Mineral Exploration Corporation Ltd (MECL), GSI and even reputed private exploration companies to undertake exploration projects in the state. Under the Central Government's National Mineral Exploration Policy, private explorers can be engaged on a revenue-sharing or auction-based reward system. Tripura will leverage funds from the National Mineral Exploration Trust (NMET) – as other states have, where crores of rupees are sanctioned for exploration of strategic minerals.

By preparing proposals for exploration of, say, critical minerals (if any hint of them in Tripura's geology) or better proving known resources (like further drilling in fireclay or silica sand deposits to upgrade their reserve status), the state can obtain central funding and technical support. Empanelled private exploration agencies (NPEAs) could be tasked with specific targets, for example exploring alluvial plains for heavy minerals or deeper layers for hydrocarbons beyond current fields. The policy sets an ambition to discover at least 2-3 new significant mineral deposits in the five-year period, which could then be taken up for auction or development.

8.3 Ease of Exploration and Surveys

To attract exploration, the procedural ease is as important as for mining. Tripura will simplify the granting of Reconnaissance Permits (RP) and Prospecting Licenses (PL) for exploration companies. A fast-track mechanism will ensure these licenses, which allow geological mapping and drilling, are

issued within a strict timeline, with clear terms. The state will also assist explorers in land access by coordinating with local authorities and communities – for instance, helping facilitate permissions to conduct surveys on private or community lands with adequate compensation for any damages as per law. Since Tripura's terrain includes difficult jungles and hilly areas, the government can provide logistical support to exploration teams (like security, guides, base camps) to incentivize work in remote areas.

8.4 Use of Modern Exploration Technology

The policy encourages employing modern techniques such as airborne geophysical surveys (magnetics, gravity) to detect anomalies, geochemical sampling of stream sediments to pinpoint mineralization (an effective method in jungle terrain) and satellite imagery analysis for alteration zones. If any promising target is identified, exploratory drilling will be supported.

In the hydrocarbon's domain, advanced seismic surveys (3D seismic) and even exploratory wells in new blocks (with necessary clearances) will be promoted, working with entities like ONGC and Oil India. All exploration data generated shall be reported back to the state's geology database, ensuring knowledge build-up.

8.5 Promotion of Private Sector and FDI

Tripura will actively market its mineral prospectivity to attract investment. While the state's mineral sector is nascent, success stories like the sustained gas production show that returns are possible. Investor meets, roadshows, or inclusion in North East investment summits will be done to showcase opportunities (e.g., the availability of high-quality glass sand or the possibility of finding more gas reserves). The policy may offer certain incentives for exploration entities: for example, reimbursement of a portion of drilling costs if the explorer completes agreed work, or an option to get first right of refusal when the explored area is later auctioned for mining.

The state will also explore **risk-sharing models** – perhaps co-funding some exploration with private players (especially for strategic minerals) and

sharing eventual revenues. Foreign Direct Investment (FDI) in exploration/mining is permitted under central policy, so Tripura will not shy away from bringing international expertise for tricky exploration challenges, provided they meet security and regulatory norms (given Tripura's border location, strategic clearances will be followed).

8.6 Critical and Strategic Minerals

Although not traditionally known for them, the policy keeps an eye on critical minerals (like rare earth elements, lithium, etc., which are vital for clean energy technologies). If any indication of such minerals appears (for instance, in heavy mineral sands or certain rock formations), Tripura will coordinate with national agencies to prioritize their exploration. This future-proofs the state's mineral strategy, aligning it with national goal of securing critical mineral supply chains.

By ramping up exploration, Tripura seeks to evolve from a state with a limited known resource base to one with a **continuous pipeline of discoverable mineral assets**. New discoveries will feed into the next cycle of mining, value addition and overall economic development, making the mineral sector a dynamic contributor to Tripura's growth.

9. Implementation and Governance Framework

A robust institutional framework is essential to translate this policy into action. The Department of Industries (Mines & Minerals), Govt. of Tripura will serve as the nodal agency to implement the policy, in close coordination with other departments and stakeholders. Key elements of the governance framework include:

9.1 Nodal Department

The Mines & Minerals Division under Industries Department will set up a dedicated **Policy Implementation Cell** to oversee the various initiatives (sustainable mining enforcement, exploration projects, etc.). This cell will develop a detailed action plan with timelines and milestones for the next five

years and publish it on the department website. It will also be responsible for annual progress reports on the policy implementation.

9.2 Inter-Departmental Coordination

Since mineral development touches multiple domains, a **high-level SteeringCommittee** will be formed with members from Departments of Industries, Environment & Forest, Finance (for revenue), Labor (for skill and safety) and Tribal Welfare (for community development), under the chairmanship of the Chief Secretary or Principal Secretary (Mines).

This committee will meet quarterly to resolve any inter-departmental issues, monitor policy progress and make course corrections if needed. For example, if a bottleneck in forest clearance is hindering a particular mining project that aligns with the policy, the committee can facilitate faster decision-making in consultation with central authorities.

9.3 Regulatory Updates

The state will update its rules and regulations to align with this policy. The Tripura Minor Mineral Concession Rules, 2014 will be reviewed and amended to incorporate provisions on environment, safety and value addition incentives. If necessary, new rules under Section 23C of MMDR Act will be notified for preventing illegal mining and for DMF implementation. The policy also suggests drafting a Tripura Mineral Exploration Policy (as a sub-component) if the exploration thrust requires separate guidelines for engaging private agencies or spending NMET funds.

9.4 Capacity and Resources

Implementing this policy will require strengthening the Mines& MineralsDivision under IndustryDepartment's capacity. The government will sanction adequate staffing – including hiring geologists, mining engineers, environmental scientists and enforcement personnel. Training programs will be arranged for officials to acquaint them with new systems like e-auctions or remote sensing monitoring.

In terms of budget, the state will allocate funds in its annual budget specifically for key initiatives (e.g., funding exploration projects until NMET grants are obtained, or setting up the GIS database and monitoring systems).

In addition, a portion of the state's mineral revenue (royalties, etc.) can be earmarked to a Mineral Development Fund to finance infrastructure around mining areas, research and skill training initiatives.

9.5 Private Sector Engagement:

The success of the policy also hinges on active participation by the private sector. A forum will be created for regular dialogue with mine leaseholders, industry associations and exploration companies in Tripura. Their feedback on procedural pain-points will be used to further ease doing business. The state will facilitate MoUs where needed – for instance, with major PSUs or companies for setting up mineral-based industries or skill centers. Any disputes arising (like on royalty calculations or land compensation) will be resolved through a fair grievance mechanism, possibly with an Ombudsman or appellate authority designated for mining matters.

9.6 Monitoring and Review

The policy is a living document and will be subject to periodic review. A mid-term review at the end of 2.5 years will be conducted to assess progress on each objective (sustainability metrics, number of industries set up, local employment generated, environmental compliance, revenue collected, exploration targets met, etc.). This review will involve independent experts to provide an unbiased assessment. Based on the findings, adjustments can be made – for example, ramping up efforts in areas lagging behind or introducing new incentives if initial ones have not yielded results. At the end of five years (2030), the government will prepare a comprehensive report on outcomes, which will also serve as a basis for the next phase policy (beyond 2030).

Effective governance will ensure that the lofty goals set in this policy are translated into tangible actions on ground. Transparency will be the

watchword – from how decisions are made to how funds are utilized – fostering trust among all stakeholders that this policy indeed benefits the state and its people.

10. Linking Mineral Development with Mineral-Based Industries in Tripura

10.1 Mineral-Industry Linkages

Tripura's key existing and planned mineral-based industries include:

- **Coal-Based**: Coke ovens; thermal power generation.
- **Limestone-Based**: Cement and lime manufacturing; calcium carbide production; precipitated calcium carbonate; bleaching powder units.
- **Other Minerals**: Granite extraction and polishing; sillimanite-based refractory products; clay washery; ceramic glazed and mosaic tile production; ceramic crockery and insulators; ferro-alloys, etc.

To ensure a stable supply of raw materials, mineral development must be coordinated with these downstream industries.

Long-term supply agreements at mutually agreed prices between mine operators and mineral processors will be promoted.

The government will support mineral-based enterprises by:

- Facilitating term-loan financing from banks and financial institutions for mining, processing, and beneficiation projects.
- Prioritizing mining lease allocations to investors who commit to establishing processing or beneficiation facilities within Tripura.

11. Research & Development in Minerals

- R&D will span the entire mineral lifecycle: geological surveys, exploration, mining, beneficiation, extraction, and product development.

- Emphasis will be placed on converting local mineral resources into commercially viable products and on developing substitute materials when indigenous supplies are limited.
- Research efforts will target maximum recovery of associated minerals and value-addition through advanced beneficiation and agglomeration techniques for lower-grade or fine-sized ores.
- The state may engage professional research institutions or agencies to support these R&D initiatives.

12. Export Promotion

- Tripura will explore establishment of dry ports and logistics hubs equipped with modern facilities at strategic locations.
- To boost exports of value-added mineral products, the government will:
- Organize and participate in trade fairs, buyer-seller meets, and awareness campaigns.
- Establish a Market Intelligence Cell within the Department of Industries to monitor global demand, price trends, and available incentives under Tripura's industrial policy.

13. Environmental Protection in Mineral Development

- Much of Tripura lies in ecologically sensitive zones. All mining must comply with national environmental and biodiversity laws to safeguard landscapes and ecosystems.
- Mining within protected or biologically rich areas will be avoided wherever possible; where unavoidable, tailored local development plans will be devised.
- Measures for forest conservation and ecological balance will be integral to mining operations.
- All mining plans must include an Environmental Management Plan covering restoration, reclamation, and concurrent afforestation.

- Pollution control measures—addressing water and air quality, soil erosion, landslides, and safe waste disposal—will be mandatory components of mining strategies.
- Mine closure plans will focus on land restoration, subsidence control, prevention of acid mine drainage, and reforestation.
- Regular public awareness campaigns will educate communities about environmental stewardship.
- To protect agricultural lands, conversion of prime farmland for minor mineral extraction will be strictly regulated, requiring formal conversion certificates.
- Lease renewals for both major and minor minerals will be contingent upon compliance with approved mining and environmental plans.

Pollution Control Clearances

- The Tripura State Pollution Control Board will streamline grant of approvals and NOCs for eligible mining and processing projects.
- Periodic inspections will ensure ongoing compliance with environmental standards.

Mine Safety & Rehabilitation

- Operators must adopt modern, safety-enhancing mining methods and technologies.
- Where mining displaces individuals or communities, comprehensive rehabilitation—including livelihood restoration—will be provided, with special attention to vulnerable groups.
- Mine owners are responsible for the welfare of affected populations; the state will facilitate and monitor rehabilitation programmes.
- Collaboration with the Directorate General of Mines Safety will be encouraged to uphold high safety standards.

14. Protection of Stakeholder Rights

- Tripura's mining policy recognizes the interests of host communities, local populations, and potentially affected groups (e.g., due to migration-related impacts).
- All mining and mine-closure plans will undergo stakeholder impact assessments.
- Mines must allocate at least 3% of their net profits to Corporate Social Responsibility initiatives, partnering with district administrations, local bodies, and NGOs to develop community assets and employment opportunities.

15. Land Reclamation & Restoration

- Post-mining land must be restored or reclaimed to its highest potential in consultation with local communities, with preference for community management of rehabilitated lands.
- Reclamation efforts will address productive land use, soil stabilization, pollutant remediation, water recharge, and visual landscape improvements.
  Progressive mine closure processes will be monitored transparently, ensuring stakeholder engagement at every stage.
- Disused or legacy mine sites predating current regulations will be rehabilitated using royalty funds to benefit local communities.

16. Private Sector Participation through Joint Ventures

- Tripura will actively pursue joint ventures with central and state public sector undertakings and private investors for exploration, mining, and marketing—including coal and other strategic minerals.
- Eligible mineral-based industries, including power generation, will qualify for incentives under the State Industrial Policy.

17.Employment Generation and Community Welfare & Social Responsibility

- A Mineral Advisory Committee of technical experts and institutions will guide welfare and socio-economic development in mining areas.

- Mine owners must provide healthcare, education, safe drinking water, and hygiene facilities for workers and their families, in line with labour laws.
- Dedicated health centres for women and children in mining zones are mandatory.The state will enforce laws to prevent child labour in mining operations.

18. Tripura Mineral Development Fund

A dedicated fund will be established to support infrastructure, welfare programmes, and community development in mineral-rich areas.

19. Foreign Direct Investment (FDI) Facilitation

FDI and technology transfer from overseas firms and non-resident Indians will be encouraged in mineral exploration, mining, value-addition, and environmental management, in accordance with central government policies.

20.Mineral-Based Tourism

Tripura will develop mineral tourism to educate visitors, generate awareness, and create local employment.Geological parks and interpretive centres will be established where feasible.

Governance and Sustainable Development Framework for Minor Minerals in Tripura

To ensure efficient, transparent, and sustainable management of minor minerals, the State Government proposes the adoption of a comprehensive Governance and Sustainable Development Framework. This framework emphasizes responsible mining practices, environmental stewardship, scientific resource management, and community welfare in line with national guidelines and global best practices.

Auction-Based Allocation of Minor Mineral BlocksTo ensure transparency, efficiency, and sustainable exploitation of the State's minor mineral resources, Tripura shall adopt a robust, auction-based allocation mechanism for granting mineral concessions. This mechanism will align with the provisions of the **Mines and Minerals (Development and**

Regulation) Act, 1957, and the **Mineral (Auction) Rules**, as amended from time to time.

1. Institutionalizing Transparent Allocation Mechanisms

- The State Government shall institutionalize a **transparent, fair, and competitive e-auction framework** for the allocation of minor mineral blocks. The goal is to eliminate discretion, promote ease of doing business, and attract technically and financially competent players.
- The **Department of Industries and Commerce**, through its Division of Mines & Minerals, shall be the nodal agency responsible for managing and overseeing the auction process.
- A dedicated **State Mineral Auction Cell** shall be constituted to coordinate block identification, clearance processes, bid evaluation, and post-auction compliance monitoring.

2. Scientific Demarcation and Mapping of Blocks

- Potential minor mineral-bearing zones will be **systematically surveyed and delineated** using modern tools such as:
  - **GPS-enabled cadastral mapping**
  - **Remote sensing and geospatial analysis**
  - **Drone surveys and GIS-based spatial analytics**

- The identified blocks will be published in the public domain with detailed geo-coordinates, geological reports, and preliminary resource assessments.

3. E-Auction Platform for Allocation

- The State shall utilize a **designated online e-auction platform**, such as the **MSTC portal**, to conduct auctions in a transparent and time-bound manner.
- All auction-related information, including the block details, tender documents, pre-bid meeting dates, and timelines, shall be made available on the portal.
- The bidding process shall follow a **two-stage system**:
    - **Technical qualification** based on pre-defined eligibility criteria.
    - **Financial bidding** on a percentage of the mineral revenue or other notified parameter.

4. Pre-Qualification of Bidders

- The auction framework shall prescribe clear **pre-qualification criteria** for bidders to ensure only capable entities can participate:
    - **Technical eligibility**: Prior experience in mining operations, manpower, machinery, and project implementation capability.
    - **Financial eligibility**: Minimum net worth, turnover thresholds, and solvency requirements based on block size and mineral potential.
- A fair opportunity will be given to local entrepreneurs and MSMEs by reserving select blocks under a separate category, wherever feasible.

5. Compliance and Post-Auction Obligations

Successful bidders shall be required to:

- Obtain all necessary **statutory clearances**, including:
    - Environmental Clearance (EC)
    - Consent to Establish and Operate (from SPCB)
    - Forest Clearance (if applicable)
- Submit and adhere to an **Approved Mining Plan** prepared in accordance with the standards prescribed by the Indian Bureau of Mines (IBM) or relevant authority.

- Implement **Progressive Mine Closure Plans (PMCP)** and adhere to **final mine closure guidelines**, including environmental rehabilitation and socio-economic transition plans.
- Deposit **performance guarantees** and abide by timelines for commencement of mining operations.

6. Grievance Redressal and Transparency

- The auction process shall be subject to **third-party audits**, and real-time updates will be published on the Directorate's portal.
- A robust **grievance redressal mechanism** will be institutionalized to address complaints from bidders and stakeholders in a time-bound manner.

Implementation of the Star Rating System for Minor Mineral Mines

To promote **sustainable mining practices**, strengthen **environmental and social accountability**, and encourage **self-regulation among mining leaseholders**, the Government of Tripura shall adopt and enforce the **Star Rating System** for all operational minor mineral mines. This initiative shall be in alignment with the directives and guidelines issued by the **Ministry of Mines, Government of India**, and the principles laid out in the **Sustainable Development Framework (SDF)** for the mining sector.

1. Mandatory Adoption of Star Rating System

- All **minor mineral mining leaseholders**, regardless of the scale of operation, shall be required to undertake **annual self-assessment** using the standardized **Star Rating Template** developed by the Ministry of Mines.
- The Star Rating System will evaluate mines on a comprehensive set of parameters grouped under the following themes:
    - **Scientific and systematic mining practices**
    - **Environmental management and pollution control**
    - **Mine reclamation and closure**
    - **Occupational health and safety**
    - **Community engagement and welfare measures**
    - **Innovation, technology adoption, and digitization**

2. Self-Assessment and Disclosure Requirements

- Each leaseholder shall conduct a **self-evaluation** at the end of every financial year using the official **star rating template** and submit the report to the **Directorate of Mines & Geology** through a dedicated **online portal or submission platform**.
- Mines shall also be required to upload geotagged photographs, compliance certificates, and supporting documentation as part of their self-declaration.
- **Non-submission** or **false reporting** shall attract penal action, including suspension of operations or debarment from future auctions.

3. Third-Party Verification and Audits

- To maintain credibility and ensure objectivity, the Directorate shall empanel qualified **independent third-party agencies** to conduct **periodic audits** of mines.
- These audits shall be carried out on a **sampling basis** or in response to public complaints, community concerns, or red flags from the self-assessment reports.
- The audits will validate the self-declared star ratings and identify areas for improvement.

4. Incentives and Penalties

- Mines achieving **4-star or 5-star ratings** shall be:
    - **Publicly recognized** through annual awards and listings on the Directorate's website.
    - Eligible for **regulatory fast-tracking**, such as quicker approvals for plan amendments or expansions.
    - Prioritized for pilot projects, digital initiatives, and capacity-building programs.
- Mines receiving **less than 3-star ratings** for **two consecutive years** shall be subjected to:
    - Mandatory improvement plans with defined timelines.
    - Closer monitoring by the Directorate.
    - Possible **penalties, suspension, or cancellation** of the lease in cases of chronic non-compliance.

5. Institutional Framework for Monitoring

- A dedicated **Star Rating Monitoring Committee** shall be constituted under the **Directorate of Mines & Geology**, comprising representatives from:
    - Department of Industries and Commerce
    - Tripura State Pollution Control Board
    - Department of Forest and Environment
    - Academic and technical institutions (e.g., NIT, State Geology Experts)
    - Civil society (as observers)
- The Committee shall meet at least twice a year to:
    - Review overall compliance levels.
    - Recommend policy improvements.
    - Oversee audit findings and recommend corrective actions.
    - Facilitate awareness and training workshops for mine operators and field staff.

6. Capacity Building and Awareness

- The State will undertake regular **training and capacity-building sessions** for mine operators and field officers on the star rating methodology, documentation, environmental compliance, and best practices.
- A **Star Rating Helpdesk** will be created to assist leaseholders in filling templates, uploading data, and understanding compliance requirements.

Provisions for Scientific Mine Closure and Monitoring

In order to ensure environmentally responsible mining and long-term ecological restoration, the Government of Tripura shall mandate the integration of scientifically designed **Progressive Mine Closure Plans (PMCP)** and **Final Mine Closure Plans (FMCP)** into all stages of minor mineral mining operations. This approach shall align with national standards and global best practices to mitigate post-mining environmental impacts and safeguard community interests.

1. Mandatory Closure Planning for All Mining Leases

- All mining leaseholders in the State shall be required to:

- Prepare and submit a **Progressive Mine Closure Plan (PMCP)** as part of their initial **Mining Plan**, outlining the progressive reclamation and environmental restoration activities to be carried out during the life of the mine.
- Submit a **Final Mine Closure Plan (FMCP)** at least two years before the scheduled cessation of mining operations, subject to approval by the competent authority.

- These plans must be certified by qualified professionals and approved by the **Directorate of Mines & Geology** prior to commencement or renewal of mining activity.

2. Components of Closure Plans

Closure plans shall comprehensively address the following components:

- **Land reclamation** and restoration of topography, including backfilling of voids and recontouring of overburden.
- **Afforestation and revegetation** using native species to ensure biodiversity restoration.
- **Surface water drainage management**, including construction of settling tanks, siltation ponds, and channels to prevent waterlogging and contamination.
- **Stabilization of waste dumps and tailings** to prevent erosion, landslides, and contamination.
- **Post-mining land use planning** with a focus on community benefit (e.g., converting mined-out areas into water reservoirs, parks, or community infrastructure).
- **Safety measures**, such as fencing, signage, and sealing of mine entries to prevent accidents and trespassing.
- **Socio-economic transition** plans for affected workers and communities, including skill training and alternative livelihood support where feasible.

3. Financial Assurance Mechanism

- To ensure the implementation of closure activities, leaseholders shall be required to furnish a **financial surety** in the form of:
  - **Bank guarantees**, or

- **Security deposits** equivalent to the estimated cost of closure activities, as calculated by an accredited agency or based on a standard cost matrix prescribed by the Directorate.

- The surety shall be held in escrow and shall be released in phases, subject to satisfactory completion and certification of closure activities.

4. Establishment of a Mine Closure Cell

- The State shall establish a **dedicated Mine Closure Cell** within the **Directorate of Mines & Geology**, tasked with:
  - Reviewing and approving PMCPs and FMCPs.
  - Conducting site inspections and audits during progressive and final closure stages.
  - Coordinating with the State Pollution Control Board, Department of Forests, and local bodies for integrated oversight.
  - Recommending release or forfeiture of financial sureties based on compliance status.

5. Post-Closure Monitoring and Public Safety

- **Mandatory post-closure monitoring** shall be undertaken for a **minimum of three years** following the cessation of mining operations.
- Monitoring shall focus on:
  - **Ecological restoration outcomes**, including vegetation growth, water quality, and soil stability.
  - **Public safety**, with periodic inspections to ensure that sealed mine shafts, dumps, and residual structures do not pose hazards.
  - **Sustainability of post-mining land use**, especially in reclaimed community or agricultural land.
- Leaseholders shall submit **annual post-closure monitoring reports** to the Mine Closure Cell, supported by field data and third-party assessments where required.

6. Community Participation and Transparency

- Local communities and panchayats shall be informed and consulted during the preparation of closure plans, especially in determining **post-mining land use**.

- The Directorate shall publish details of approved closure plans and status of compliance in the public domain for transparency and public accountability.

District Mineral Foundation (DMF) Trust and PMKKKY Implementation

Tripura State Mineral Trust

Tripura will notify a **"Tripura State Mineral Trust"** in exercise of powers conferred by clause (g) of subsection 1(A) of Section 15 of the Mines & Minerals (Development & Regulation) Act 1957, a Central Act, for constituting a Trust for funding exploration activities for Minor Minerals.

To ensure the equitable sharing of benefits from mineral development and promote the welfare of communities affected by mining operations, the State Government of Tripura shall operationalize **District Mineral Foundations (DMFs)** in all mining-affected districts. The establishment and functioning of DMFs shall be governed by the **Tripura District Mineral Foundation Trust**, in alignment with the amended provisions of the **Mines and Minerals (Development and Regulation) Act, 1957** and the revised guidelines of the **Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY)**.

1. Legal Framework and Institutional Setup

- The **Tripura District Mineral Foundation Trust** shall provide the statutory framework for the formation, registration, governance, and operation of DMFs in every district where mining activity occurs.
- Each DMF shall function as a **non-profit statutory trust**, aimed at implementing welfare projects in mining-affected areas.
- The institutional structure of each DMF shall include:
    - A **Governing Body**, chaired by the **District Magistrate/Collector**, comprising representatives from local government, civil society, community representatives, and sectoral departments.

2. Mandatory Contributions to DMF

- All minor mineral leaseholders shall mandatorily contribute to the respective DMF, calculated as a **fixed percentage of the royalty** payable.
- Contributions shall be deposited into a dedicated DMF bank account maintained by the District Administration and audited as per government norms.

3. Principles for Utilization of DMF Funds

DMF funds shall be planned and utilized in accordance with the objectives of the **PMKKKY**, focusing on high-priority and need-based development works in directly and indirectly mining-affected areas. The core areas of investment shall include:

- **Drinking Water Supply and Sanitation**
  - Provision of piped water supply, safe drinking water facilities, and community toilets.
  - Construction and maintenance of water harvesting structures and rainwater recharge systems.
- **Healthcare and Nutrition**
  - Strengthening of primary and secondary healthcare infrastructure, including mobile health units.
  - Nutrition interventions, maternal and child health programs, and procurement of medical equipment.
- **Education and Skill Development**
  - Infrastructure for schools, hostels, and anganwadis.
  - Scholarships for students from mining-affected families.
  - Vocational training centers and skilling initiatives linked to local employment.
- **Livelihood Support and Social Welfare**
  - Promotion of SHGs, cooperatives, and income-generating schemes.
  - Special focus on women, children, differently-abled persons, and vulnerable groups.
- **Environmental and Ecological Restoration**
  - Reclamation of degraded mining lands.
  - Afforestation, watershed management, and biodiversity conservation.
- **Rural Infrastructure**
  - Development of roads, energy access (solar microgrids), community halls, and digital infrastructure.

- Public transportation facilities and rural electrification in affected villages.

4. Participatory Planning and Transparency

- The planning of DMF projects shall be carried out through a **bottom-up participatory process**, involving inputs from:
  - **Gram Sabhas**, Panchayati Raj Institutions, community representatives, and civil society.
- The **Annual Action Plan** of the DMF shall be developed based on field assessments and local priorities, and approved by the Governing Council.
- Projects shall be selected with a preference for convergence with ongoing State and Central Government schemes to maximize impact.

5. Monitoring, Evaluation, and Public Disclosure

- Each DMF shall adopt a robust **Monitoring and Evaluation (M&E) Framework**, including:
  - Third-party social audits.
  - Impact evaluations of key interventions.
  - Monthly progress reporting to the State Mining Department.
- The **Directorate of Mines & Geology** shall maintain a **State-level DMF Monitoring Cell** to oversee compliance, facilitate capacity-building, and aggregate performance data across districts.
- Transparency and accountability shall be ensured through:
- **Online portals** showcasing fund receipts, allocations, and project status.
- **Public dashboards** and annual DMF report cards.
  - **Regular stakeholder meetings** and public hearings at the district level.

Scientific Survey, Mapping and Exploration of Minor Minerals

In line with the principles of sustainable mining and informed resource governance, the State of Tripura shall undertake a **comprehensive program of scientific survey, mapping, and exploration** of minor mineral resources. This initiative will support evidence-based policy decisions, environmentally sound mining practices, and long-term economic planning at the district and state levels.

1. Objectives

The primary objectives of this initiative are to:

- Establish a **comprehensive mineral inventory** of minor minerals across the State.
- Promote **data-driven auctioning** and resource management.
- Minimize environmental degradation through **zoning and regulated extraction**.
- Enable **transparent and judicious allocation** of mineral blocks for commercial and public use.

2. Institutional Collaboration and Capacity Building

To ensure technical rigor and credibility, the State Government shall **collaborate with reputed scientific and technical institutions**, including:

- **Geological Survey of India (GSI)** for geological mapping and expertise.
- **North Eastern Space Applications Centre (NE-SAC)** for satellite imagery, GIS-based assessments, and terrain analysis.
- **Central and State Remote Sensing Agencies**, and other **empanelled exploration consultants** for thematic surveys and drone-based reconnaissance.
- **Academic institutions** such as NIT Agartala for research support and data validation.

3. Priority Minor Minerals for Survey and Exploration

As part of the State's initial focus, the following minor minerals shall be prioritized for detailed survey and assessment:

- **Sand**
    - Detailed **riverbed and floodplain surveys** to identify extraction zones and estimate annual replenishment volumes.
    - Use of **bathymetric mapping**, **sediment sampling**, and **hydrological analysis** for sustainable sand mining planning.
- **Stone Aggregates (Granite, Basalt, Sandstone)**
    - Geological and topographical mapping to identify **quarryable zones** with adequate safety buffers.

- Assessment of **mineral quality**, overburden depth, accessibility, and impact on surrounding ecosystems.

- **Clay and Earth**
  - Soil testing and classification to determine suitability for **brick-making**, **earthen construction**, and **embankment works**.
  - Identification of localized pockets of high-quality clay deposits for **regulated extraction**.

4. Deployment of Modern Technologies

The State will mandate the use of **modern and non-invasive technologies** for mineral exploration and environmental baseline assessment, including:

- **Remote sensing** and satellite imagery analysis for identifying mineralized belts.
- **Drone-based aerial surveys** for high-resolution terrain mapping and 3D site modeling.
- **Geographic Information Systems (GIS)** for integrated resource mapping, including land use, hydrology, vegetation, and human settlements.
- **Topographic and geo-technical analysis** for slope stability, drainage patterns, and mining impact prediction.

All data generated shall be stored in a **centralized mineral resource GIS database**, managed by the Directorate of Mines & Geology, and integrated with national geological datasets.

5. Preparation of District Survey Reports (DSRs)

In accordance with the **Sustainable Sand Mining Guidelines, 2016** (as revised in 2020), the State shall ensure the preparation of **District Survey Reports (DSRs)** for all districts before the allocation of any new minor mineral block.

Key features of the DSR process will include:

- **Baseline data collection** on topography, geology, hydrology, ecology, and socio-economic parameters.
- Identification of **existing mining sites**, **proposed new blocks**, **no-mining zones**, and **environmentally sensitive areas**.
- Integration of public inputs through **Gram Sabha consultations** and **district-level stakeholder meetings**.

- Periodic **revision and validation** of DSRs every **five years**, or earlier in case of major changes in land use or resource availability.

DSRs shall serve as the **primary reference document** for:

- Environmental Clearance (EC) processes.
- Determination of sustainable yield for each block.
- Framing of regulatory conditions, including depth limits, buffer zones, and transport routes.

6. Environmental and Planning Integration

All surveys and mapping exercises shall be integrated with:

- **State-level environmental management plans**.
- **District Mining Plans** to synchronize mineral development with land use and ecological conservation.
- **Zoning regulations** to prevent mining in floodplains, wetlands, forest areas, and near critical infrastructure.

7. Transparency and Public Access

To enhance transparency and promote public trust, all finalized DSRs and geological maps shall be:

- **Digitally published** on the official website of the Directorate of Mines & Geology.
- Made accessible through a **public-facing mineral information portal**, with features like interactive maps, mineral block status, and auction updates.

Fiscal Incentives for Promoting Private Sector Investments in Downstream Activities

This policy recognizes the importance of downstream value addition through private sector participation. To facilitate this, the fiscal incentive framework is being introduced, aimed at enhancing the competitiveness of mineral-based industries and attracting significant private investment, thereby ensuring economic growth, employment generation and local industrialization.

General Fiscal Incentives for Mineral-based Industries

1 Capital Investment Subsidy: Eligible mineral-based downstream industries will be provided capital investment subsidies of up to 30% of plant and machinery cost, subject to a maximum limit of Rs. 3 crores per unit.

2 Interest Subsidy on Term Loans: Interest subsidy of up to 4% per annum will be provided on term loans availed from banks or financial institutions, for a period of five years, subject to a maximum subsidy cap of Rs. 2 crores per unit.

3 Electricity Duty Exemption: Exemption from electricity duty for mineral-based industries for a period of five years from the date of commencement of commercial production.

4 Power Tariff Subsidy: Subsidy of up to Rs. 2 per unit for mineral-based downstream industries for the initial five years from the date of commercial operation, subject to maximum cumulative subsidy of Rs. 1 crore per annum per enterprise.

5 Transport Subsidy: Transport subsidy will be provided at the rate of 50% for raw materials and finished products within and outside the state, subject to an annual ceiling of Rs. 50 lakhs per enterprise.

Customized Incentives for Large-Scale Investments (above Rs. 50 crores and employing 100+)

Recognizing the transformative impact of large-scale private investments, the Government of Tripura shall offer additional, tailor-made fiscal benefits to enterprises investing more than Rs. 50 crores and providing employment to 100 or more people:

1 Enhanced Capital Investment Subsidy: Additional subsidy, raising total capital investment subsidy up to 40% of plant and machinery, capped at a maximum of Rs. 10 crores per unit.

2 Special Interest Subsidy: Enhanced interest subsidy of 6% per annum on term loans, available for up to 7 years, capped at Rs. 5 crores per enterprise.

3 Employment Generation Subsidy: Special employment incentive of Rs. 10,000 per employee per annum for skilled and semi-skilled employees from local communities, applicable for up to 5 years.

4 Power Tariff Incentive: Increased power tariff subsidy of up to Rs. 3 per unit for the initial five years, subject to a ceiling of Rs. 1.5 crores per annum per enterprise.

5 Customized Transport Incentive: Enhanced transport subsidy of up to 60% for inter-state and intra-state transport costs for raw materials and finished products, capped at Rs. 1 crore per annum.

6 Priority Single Window Clearance and Facilitation: Dedicated priority cell within the Single Window Clearance System for expedited approvals, clearances and regulatory compliance assistance to ensure seamless project implementation.

7 Special Infrastructure Support: Government assistance for developing dedicated infrastructure such as internal roads, water supply lines, dedicated power feeder lines and waste management facilities for the investor's industrial premises, with government contribution covering up to **50%** of total infrastructure development cost, capped at **Rs. 3 crores**.

Empowered Committee for Customised Incentive Approval

To streamline and expedite the approval of customised fiscal incentives for significant downstream investments, an Empowered Committee shall be constituted under the chairmanship of the Chief Secretary, Government of Tripura.

1 Composition of the Empowered Committee

1 Chairperson: Chief Secretary, Government of Tripura

- Commissioner of Taxes, Government of Tripura
- Principal Chief Conservator of Forests or the Chief Conservator of Forests or District Forest Officer- or Divisional Forest Officer or any other authority specified by the Principal Chief Conservator of Forest
- Representatives from other concerned departments as special invitees, based on project-specific requirements.

2 Mandate of the Committee

Evaluate proposals seeking customised incentives based on:

- Quantum of investment (Rs. 50 crores or above)
- Employment generation potential (100 or more direct jobs)
- Strategic value to the state's economy
- Alignment with the sustainable and inclusive development objectives of the Mineral Policy

Recommend the proposals with suitable incentives for approval by the State Cabinet.

3 Approval Process

Proposals received from eligible enterprises will be scrutinized by the Empowered Committee through periodic meetings held at least quarterly, or more frequently as required.

The Committee's recommendations will be presented by the Department of Industries (Mines & Minerals cell) to the State Cabinet for final approval, ensuring transparency, accountability and adherence to state policy guidelines.

Once approved by the Cabinet, customised incentive packages will be communicated to the respective investors clearly outlining the terms, conditions and compliance requirements.

Policy Implementation

- An Empowered Committee, chaired by the Additional Chief Secretary, will oversee and periodically review policy implementation.
- All relevant departments must issue follow-up notifications to operationalize this policy. The Committee will address implementation challenges and recommend corrective measures.
- A comprehensive Master Plan for exploration, exploration, marketing, and related activities for all minerals will be prepared.

State Government Powers

The Government of Tripura reserves the right to amend or withdraw any provision of this policy via official notification, as deemed necessary.

General Provisions

To ensure clarity, transparency, and effectiveness in the implementation of the Tripura State Minor Mineral Policy (2025–2030), the following general provisions will govern all stakeholders involved in mineral exploration, mining, downstream processing, and related activities within the state.

1.Applicability

- This policy shall apply to all mineral resources within the territorial jurisdiction of Tripura, including hydrocarbons, minor minerals, and other geological resources as notified by the State Government.
- Provisions relating to minor minerals will align with existing and revised Tripura Minor Mineral Concession Rules, whereas major minerals will adhere to central acts and rules.

2.Effective Date and Policy Validity

- The Mineral Policy shall come into force from the date of its official notification by the Government of Tripura.

- The validity period of this policy shall be five years, unless reviewed and extended or amended earlier by the Government based on evolving needs and contexts.

3.Interpretation and Amendments

- In case of any ambiguity or doubt in interpretation of provisions, the interpretation provided by the **Department of Industries (Mines and Minerals), Government of Tripura**, shall bc final and binding.
- The State Government reserves the right to amend or modify the provisions of this policy at any timc to cnsurc it rcmains rcsponsivc to changes in national policies, market conditions, environmental considcrations, and statc prioritics.

4 Coordination Among Dcpartmcnts

- All conccrncd dcpartmcnts—including Industrics & Commcrcc, Finance, Environment, Revenue, and Labour—shall coordinate effectively with the Department of Industries (Mines and Minerals) to implement this policy smoothly.
- Periodic review meetings shall be conducted by the Empowered Committee under the Chief Secretary to ensure efficient inter-departmental coordination and rapid resolution of issues.

5 Dispute Resolution

- Any dispute or grievance arising out of mineral exploration, mining, or downstream activities shall initially be addressed by the grievance redressal mechanism set up under the Department of Industries (Mines and Minerals).
- Unresolved disputes may escalate to an appellate authority specifically designated by the State Government, ensuring timely, fair, and impartial resolution.

6.Regulatory Compliance

- All mining operations and related activities must strictly adhere to applicable laws and regulations, including but not limited to the

Mines and Minerals (Development and Regulation) Act, Environmental Protection Act, Forest Conservation Act, Mines Act, and applicable labour laws.

- Violations of compliance norms will invite appropriate penalties, including suspension or cancellation of mining rights, monetary fines, or legal actions.

7.Transparency and Information Dissemination

- The State Government commits to transparency in all aspects of the mineral sector. Key information—including mineral lease allocations, royalties collected, DMF utilization, and incentive disbursements—shall be regularly published online for public scrutiny.
- Stakeholder consultations and public disclosures will be integral to the governance approach, promoting accountability.

8.Protection of Rights

- The rights and welfare of local communities, especially those directly impacted by mining activities, will be fully safeguarded as per the relevant central and state laws, including compensation, resettlement, and rehabilitation provisions.
- Special attention shall be given to the rights of indigenous and tribal communities under the Forest Rights Act (FRA) and Panchayat Extension to Scheduled Areas (PESA) Act wherever applicable.

9.Incentive Withdrawal

Fiscal and customised incentives provided under this policy are subject to adherence to agreed-upon conditions and performance milestones. Non-compliance with specified terms can lead to the partial or complete withdrawal of incentives and/or recovery of benefits already extended.

10.Monitoring, Reporting, and Review

- A robust monitoring framework, leveraging digital tools and field inspections, will ensure effective oversight of the policy's implementation.

- An annual policy implementation report shall be prepared by the Department of Industries (Mines and Minerals), highlighting achievements, challenges, and areas requiring intervention.
- A comprehensive mid-term review after two-and-a-half years will assess progress and recommend mid-course corrections as necessary.

(Kiran Gitte, IAS)

Secretary to the Government of Tripura

Annexure 1

Current Status Analysis Geological Foundation and Resource Base

Tripura's geological architecture, positioned within the Assam-Arakan Basin, comprises Tertiary sedimentary sequences that have created favorable conditions for hydrocarbon accumulation and diversc industrial mincral deposits . The state's complex structural geology, characterized by north-south trending anticlines separated by broad synclines, has concentrated natural gas reserves primarily in the Bokabil and Bhuban sandstone formations at depths ranging from 850-3,272 meters.

TABLE 1

Mineral Name	**Estimated Reserves (MT/BCM)**	**Grade/Density (g/cm³)**	**Major Districts/Geological Units**	**Primary Industrial Applications**
Fircclay	0.37 MT	2.4–2.6	West Tripura, Khowai	Refractories, ceramics
Quartz-Silica Sand	0.49 MT	2.65	Bishramganj, Mohanpur	Glass manufacturing, foundries
Glass Sand	0.36 MT	1.7–2.3	Sekerkote, Old Agartala	Sheet glass, containers
Plastic Clay	1.73 MT	1.63–2.60	Mohanpur, Champamura	Sanitary ware, insulators

Limestone	0.99 MT	1.93–2.20	Sakhan-Jampui Range	Lime-pozzolana mixes
Shale	N/A	1.77–3.30	Tipam Formation	Brick manufacturing
Sandstone/Hard Rock	Undisclosed	2.1–2.76	Jampui Hills, Longtarai Valley	Road metal, aggregates
Kaolin	N/A	2.6–2.8	Riverbank deposits	Paper coating, ceramics
Coal	Undisclosed	1.2–1.5	Khowai, Ambassa	Thermal applications (local use)

Resource Endowment and Quality Assessment

The mineral inventory analysis reveals a concentrated resource base dominated by high-qualitywithcomplementaryindustrialminerals suitableforvalue-addedmanufacturing.

Fireclaydepositsexhibithighaluminacontentexceeding 37%, while silica sand resources demonstrate 98% SiO_2 purity levels suitable for glass manufacturing applications.

EconomicContributionandValueGeneration

Historicalproductionvaluesreachedpeaklevelsof₹1,224croresin2020-21,thoughrecent data indicates potential for enhanced value capture

through downstream processing andindustrial integration.

PolicyandInvestmentEnvironment

The regulatory framework demonstrates strong alignment with national priorities through multiple policy instruments supporting mineral sector development. The Tripura Industrial InvestmentPolicy2024specificallyidentifiesMinerals-basedindustriesasthrustsectors, while the National Critical Minerals Mission creates opportunities for expanded exploration activities.

Implementation of the Pradhan Mantri Khanij Kshetra Kalyan Yojana provides mechanisms for community benefit sharing, though current applications remain limited due to small-scale mining operations.

TABLE 5

Policy/Scheme	**Key Features**	**Applicability to Tripura**	**Investment Impact**
Tripura Industrial Investment Policy 2024	Gas-based industry incentives, thrust sector identification	Fully applicable	High for gas-based industries
PMKKKY (Pradhan Mantri Khanij Kshetra Kalyan Yojana)	District Mineral Foundation funding for mining-affcctcd areas	Limited (small-scale mining)	Moderate for local dcvclopmcnt
National Critical Minerals Mission	Critical mineral exploration, overseas acquisitions	Potential for exploration	Medium-term potential
City Gas Distribution	Priority allocation for	Fully operational	Ongoing infrastructure

(CGD) Policy	domestic gas distribution		development
Mineral Auction Transparency Rules	Transparent allocation of mineral blocks	Limited mineral blocks	Limited immediate impact

Reserves&ProductionCapacity

TABLE 6			
Mineral	**Total Reserves**	**Annual Production (2023)**	**Utilization Rate**
Glass Sand	0.36 MT	12,000 tonnes	3.3%
Plastic Clay	1.73 MT	8,500 tonnes	0.5%
Limestone	0.99 MT	4,200 tonnes	0.4%

Tripura'sShareinNationalOutput(2022)

TABLE 7			
Mineral	**India's Output**	**Tripura's Output**	**% Share**
Fireclay	713.5 MT	0.00037 MT	0.0005%
Silica Sand	490 MT	0.49 MT	0.1%
Glass Sand	490 MT	0.36 MT	0.07%
Plastic Clay	713.5 MT*	1.73 MT	0.24%
Limestone	392.76 MT	0.99 MT	0.00025%

Export&IndustrialUse

Table 8			
Mineral	**Domestic Use (%)**	**Export Use (%)**	**Buyer Industries**
Silica Sand	100%	0%	Construction, glass

Fireclay	100%	0%	Refractories, Ceramics
Plastic Clay	100%	0%	Sanitary Ware, Insulators
Glass Sand	100%	0%	Sheet Glass, Containers

Annexure2

NationalMineralPolicy,2019

- Provides a central guiding framework for mineral development across India, including Tripura.
- Emphasizestransparencyandsustainableminingpractices.
- Promotesauction-basedallocationofmineralblockstoensurefairness.
- Encouragesthcuscofc-govcrnanccandscicntificminingmcthods.
- Focusesonthewelfareofmining-affcctcdcommuniticsandlocaldcvclopmcnt.
- Stressesenvironmentalsafeguardsandresponsibleuseofmineralresources.
- Supportsvalueadditionandinvolvementoflocalandtribalpopulationsinminingareas.

Environment (Protection) Act & Rules, 1986

- ServesastheprimarylawforenvironmentalprotectioninIndia.
- Empowers the government toregulateandcontrolpollutionacrossallsectors,including mining.
- Setsenvironmentalstandardsandmandatescomplianceforindustries.
- RequiresEnvironmentalImpactAssessments(EIA)andclearancesforminingprojects.
- Mandatespollutioncontrolmeasuresandsafehandlingofhazardoussubstances.
- Prescribespenaltiesforviolationsofenvironmentalregulations.
- Actsasanumbrellalawforallotherenvironmentalregulationsin India.

Tripura Minor Mincral Concessions Rulcs, 2014

- Regulates the grant of mining leases and permits for minor minerals (e.g., sand, clay, gravel) in Tripura.
- OnlyIndiannationalsareeligibleforminingleases,exceptwithspecialgovernment approval.

- Prohibits mining in reserved, protected,orforestareaswithoutpriorcentralgovernment clearance.
- Specifiestheapplicationprocessandtheauthoritiesempoweredtograntleases.
- Requiresclearancesfromlocalbodies(suchasPanchayatsorMunicipalities).
- Mandatescompliancewithenvironmentalandsafetystandardsduringmining operations.
- Ensurestransparencyandresponsibleminingwithinthestate.

Mines and Minerals (Development & Regulation) Act, 1957 (MMDR Act)

- Principal legislation for the regulation of mines and mineral development in India (except coal, petroleum, atomic minerals).
- Defines the powers of central and state governments in granting mining leases and mineral concessions.
- Regulatesthecollectionofroyaltiesandotherpaymentsfromminingactivities.
- Introducestransparent,auction-basedallocationofmineralblocks.
- Promotesprivatesectorparticipationinmineralexplorationandmining.
- Strengthenscompliancewithenvironmentalandsocialsafeguardsinminingop erations.
- Providesthelegalframeworkforsustainableandregulatedmineralextraction.

TABLE 9

Policy/Act Name	Who Allocates?	What is Allocated?	How is it Allocated?
Tripura Minor Mineral Concessions Rules, 2014	State Forest Department (various officers)	Minor minerals (sand, clay, gravel, etc.)	Apply to forest department → Submit documents/fees → Get local body clearance → Department grants lease/permit.
National Mineral Policy, 2019	State/Central Government	Major minerals (like limestone, iron ore)	Through public auction (bidding); highest qualified bidder gets mining rights; policy guides fair process.

Environment (Protection) Act & Rules, 1986	Environment Ministry/State Pollution Boards	Environmental clearance for mining	Mining applicant submits proposal → Environmental study & public hearing → Clearance granted if all rules are followed.
Mines and Minerals (Development & Regulation) Act, 1957 (MMDR Act)	State/Central Government	Major minerals	Mining blocks identified → Auction conducted online → Winner signs agreement and gets mining lease.

Other Relevant Frameworks

- OffshorcArcasMincral(DcvclopmcntandRcgulation)Act,2002
- Applies to offshore mineral resources; not directly relevant to Tripura's currcntonshorc mincral profilc.
- CriticalandStrategicMineralsPolicy(2023Amendments)
- Central government now exclusively auctions certain critical minerals, with revenueaccruing to the state.
- StateActionPlanonClimateChange(Tripura)
- Focusesonsustainabledevelopment,afforestation,andclimateadaptation,b utdoesnot constitute a mineral policy.

Policy/Rule Name	**Applicability in Tripura**	**Source/Authority**
Offshore Areas Mineral (DevelopmentandRegulation) Act, 2002	No major offshore resourcesin Tripura	Central Govt

CriticalandStrategicMinerals Policy (2023)	Yes,ifsuchmineralsare found	Central Govt
Mineral(Auction)Rules,2015+ Amendments	Yes(forauctionof mineral blocks)	Central Govt

Annexure3:IllustrativeListofActs,Rules,andRegulationsApplicabletoMining Operations

1. CentralActs,Rules,andRegulations(ApplicabletoBothStates)
   - TheMinesandMinerals(DevelopmentandRegulation)Act,1957(MMDRAct)
   - ThcMineralConcessionRules,1960
   - TheMineralConservationandDevelopmentRules,2017(earlier1988)
   - TheMinesAct,1952andMinesRules,1955
   - TheFactoriesAct,1948
   - TheExplosivesAct,1884andExplosivesRules,1983
   - ThcIndianForestAct,1927
   - TheForest(Conservation)Act,1980
   - TheWater(PreventionandControlofPollution)Act,1974andrelatedRules
   - TheAir(PreventionandControlofPollution)Act,1981andrelatedRules
   - TheEnvironment(Protection)Act,1986andEnvironment(Protection)Rules,1986
   - TheHazardousWastes(Management&Handling)Rules,1989
   - TheWorkmen'sCompensationAct,1923andRules,1924
   - ThcIndianElectricityAct,1910andRules,1956
   - The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006
   - TheLandAcquisitionAct,1894(nowreplacedbytheRighttoFairCompensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013)
   - ThePublicPremises(EvictionofUnauthorizedOccupants)Act,1971
   - TheAtomicEnergyAct,1962(forprescribedminerals)
   - TheNationalMineralPolicy,2019
   - TheCoalMines(Nationalisation)Act,1973andrelatedcoal-specificActs(mainly relevant for coal-producing states)
   - TheCokingCoalMines(Nationalisation)Act,1972
   - ThcCoalBcaringArcas(AcquisitionandDcvclopmcnt)Act,1957

Annexure4:Departments for Mines and Minerals

Central Departments

Department/Body	Role/Responsibility
Ministry of Mines (MoM)	Apex body for policy, regulation, and administration of mines and minerals (except coal, petroleum, atomic minerals)
Geological Survey of India (GSI)	Survey and exploration of minerals
Indian Bureau of Mines (IBM)	Enforcement of rules, inspection, mining plan approval, mineral conservation
State Governments	Regulation and policy-making for minor minerals, implementation of central policies, lease allocation
District Mineral Foundation (DMF)	Welfare of mining-affected areas, funded by mining revenues
National Mineral Exploration Trust (NMET)	Promotion of mineral exploration, funded by mining levies

State with Dept. of I&C

State	Governing Department Name
West Bengal	Directorate of Mines and Minerals, Dept. of Industry, Commerce and Enterprises
Manipur	Department of Commerce & Industries (Geology & Mining Division)
Mizoram	Geology & Mining Wing, Commerce & Industries Department
Tripura	Department of Industries & Commerce
Himachal Pradesh	Department of Industries (Mining Wing)

State wise

State	Governing Department/Agency
Andhra Pradesh	Department of Mines & Geology
Arunachal Pradesh	Department of Geology and Mining

Assam	Directorate of Geology & Mining
Bihar	Department of Mines & Geology
Chhattisgarh	Department of Mining and Geology
Goa	Directorate of Mines & Geology
Gujarat	Commissioner of Geology & Mining
Haryana	Department of Mines & Geology
Himachal Pradesh	Department of Industries (Mining Wing)
Jharkhand	Department of Mines & Geology
Karnataka	Department of Mines & Geology
Kerala	Department of Mining and Geology
Madhya Pradesh	Mineral Resources Department
Maharashtra	Directorate of Geology and Mining
Manipur	Department of Commerce & Industries (Geology & Mining Division)
Meghalaya	Directorate of Mineral Resources
Mizoram	Geology & Mining Wing, Commerce & Industries Department
Nagaland	Department of Geology and Mining
Odisha	Department of Steel & Mines
Punjab	Department of Mining and Geology
Rajasthan	Department of Mines & Geology
Sikkim	Mines, Minerals & Geology Department
Tamil Nadu	Department of Geology and Mining
Telangana	Department of Mines & Geology
Tripura	Directorate of Industries & Commerce (Geology & Mining Section)
Uttar Pradesh	Directorate of Geology & Mining
Uttarakhand	Department of Geology & Mining
West Bengal	Directorate of Mines & Minerals

Source:
Ministry of Mines https://mines.gov.in

Geological Survey of India www.gsi.gov.in

Indian Bureau of Mines www.ibm.nic.in

National Aluminium Company Limited www.nalcoindia.com

Hindustan Copper Limited www.hindustancopper.com

Mineral Exploration & Consultancy Limited www.mecl.co.in

Jawaharlal Nehru Aluminium Research Development and Design Centre www.jnarddc.gov.in

National Institute of Rock Mechanics www.nirm.in

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