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Indian Mining & Exploration Updates



List of Odisha Iron ore block
auction winner list
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Govt looks to further amend
MMDR act (Page 1)

Govt looks to further amend MMDR Act

This comes against the backdrop of National Mineral Policy goals to increase mineral production by 200% in 7 years.

The union government is exploring further amendment to the Mines and Minerals (Development and Regulation) (MMDR) Act to bring in more reforms in India's mining sector, said Coal, Mines and Parliamentary Affairs minister Prahlad Joshi on Wednesday.

The government earlier introduced a raft of mineral sector reforms, including doing away with the distinction between the captive and non-captive mines, reallocation of non-producing blocks of state-owned firms, and amended some sections of the MMDR Act to help auction more mines.

"Union Minister of Coal, Mines and Parliamentary Affairs Shri Prahlad Joshi has said that Ministry of Mines is contemplating further amendment to the Mines and Minerals (Development and Regulation), MMDR Act to bring about tangible reforms in the mining sector of the country," mines ministry said in a statement.

This assumes significance given that the mineral sector contributes only 1.75% to the

country's gross domestic product (GDP), with India importing minerals worth ₹2.5 trillion annually. The union mines ministry has also adopted the scheme for accreditation of private exploration agencies for prospecting minerals.

"He urged the mining sector to increase the contribution of the sector to the country's GDP to 2.5 per cent. Addressing a function organized by the Ministry of Mines here today for handing over 100 G4

mineral blocks reports of Geological Survey of India (GSI) to different State Governments, Minister Joshi stated that Ministry of Mines is in the process of finalizing the accreditation process for private exploration entities," the statement added.

This comes against the backdrop of National Mineral Policy goals to increase mineral production by 200% in 7 years. Of India's obvious geological potential area of 0.571 million sq.

km, only 10% has been explored. "The Minister called upon the States that received the mining block reports to act on the reports without any delay to make the auction process faster.



He also directed the Ministry of Mines to make available more financial assistance to States. Stating that proactive approach by State governments can bring about tangible reforms in mining, the Minister assured all assistance from the Centre. Shri Joshi pointed out that despite having the fourth largest coal reserve, India is still importing thermal coal and our mineral potential is no way less than other mineral rich countries like Australia," the statement said.

-Source: MINT

Coal ministry mulls scheme to allow coal block owners to surrender mines



The Coal Ministry is planning to come up with a scheme to permit coal block allottees to surrender mines that they are not in a position to develop due to technical reasons

The Coal Ministry is planning to come up with a scheme to permit coal block allottees to surrender mines that they are not in a position to develop due to technical reasons.

The proposed scheme will allow surrender of coal blocks without imposition of financial

penalty or penalty on merit basis after examining the proposal by a scrutiny committee.

"To expedite production from allocated coal blocks and for ease of doing business, a scheme will be prepared to allow surrender of coal blocks to those allocattees where present allocattee is not in a position to develop the coal block due to technical reasons," according to the Coal Ministry's agenda for 2021-22.



→ Coal blocks surrendered under this scheme will immediately be offered for auction for commercial mining for putting the block to production early. The move would help in boosting the production of coal from the mines allocated through auction route.

To meet the increased demand for coal in the country, a scheme is being formulated to allow

allottees to sell up to 50 per cent of the produced fuel after meeting its captive needs, the coal ministry said.

The incentive to allottees will spur them to produce more coal and sell in the market.

India's total coal production registered a marginal decline of 2.02 per cent to 716.084 million tonnes during the last fiscal year. The

country had produced 730.874 million tonnes (MT) of coal in FY'20, according to provisional statistics of 2020-21 of the coal ministry.

Of the total coal production, 671.297 MT was non-coking coal and the remaining 44.787 MT was coking coal. Public sector produced 685.951 MT while the remaining 30.133 MT was produced by the private sector.

-Source: Energyworld.com

Non-fuel Mineral Auctions: How Fair is the Game, and For Whom?

ABSTRACT

The Mines and Minerals (Development and Regulation) Act, 1957 was amended in 2015 and introduced as an auctions system to address three major concerns—transparency, fairness, and objectivity—raised by the Supreme Court regarding the mineral asset allocation process. Four changes became evident following the Act coming into force, and these have impacted competitive efficiency in the mining sector. (1) Of 114 non-fuel mineral auctions held so far, many received excessively high bids (particularly for iron-ore mines); bids higher than even the estimated value of reserves. (2) Mining company profiles changed from merchant miners (selling minerals on the market), to captive miners (owning downstream plants that consume the minerals). This could lead to less-than-efficient usage of the minerals acquired through auctions, with induced general equilibrium externalities. (3) High auction bids, combined with high royalty rates and some other statutory payments, have not encouraged new mining activity in any significant way. Short-term financial gains for State governments, and possible long-term revenue losses and strangulation of new investments, may result. (4) Many auctioned blocks are of previously operational mines (brownfield mines), where the leases had lapsed as of March 2020 as per conditions laid down in the amended Act. This paper also touches upon the subsequent amendment to the Act in 2021, and concludes with suggestions for rationalising the auctions mechanism

to ensure competitive efficiency in the mining sector.

INTRODUCTION

The Mines and Minerals (Development and Regulation) Amendment Act, 2015, (henceforth MMDR Act, 2015) ended the first-come, first-serve system of mining allocations and has brought in an auctions regime. This was intended to bring in 'greater transparency' and '[remove] discretion' (Ministry of Mines, Government of India, 2019) in the allotment of natural resources. The Government of India noted that State governments would receive an 'increased share [of revenues] from the mining sector' with the new system (ibid.). According to the Ministry of Mines, 114 non-fuel mines have been successfully auctioned to date. Technically qualified bidders (i.e., companies fulfilling certain criteria) participated in an ascending forward online electronic auction and bid on the percentage of the value of minerals which would be despatched over the lifespan of the mining operation.¹ There are two stages in the auction process, where the highest bid in the first stage is taken as the floor price of the second stage. The ascending forward system allows bidders to outbid others in each stage. The respective State government then granted each auction's highest bidder a mining lease or a composite license (i.e., a prospecting license-cum-mining lease), subject to their having satisfied various conditions. The analysis in this paper provides an overview of bids made in the auctions of iron ore,

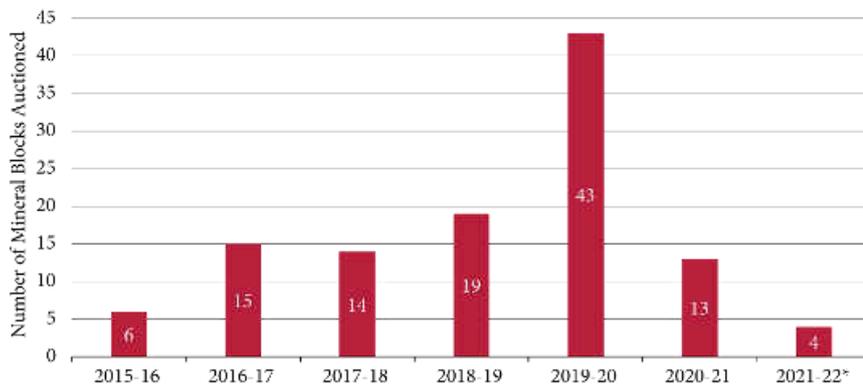
limestone, iron ore & manganese, bauxite, manganese, graphite, gold, chromite, copper, and diamond, with a focus on iron ore and limestone.

The analysis in this paper provides an overview of bids made in the auctions of iron ore, limestone, iron ore & manganese, bauxite, manganese, graphite, gold, chromite, copper, and diamond, with a focus on iron ore and limestone.

Auctions of Non-fuel Mines: A Summary

Of the 114 auctions held so far, detailed information on the first 97 auctions (held up to March 2020) is available on Transparency, Auction Monitoring and Resource Augmentation (TAMRA),² the auction monitoring website of the Ministry of Mines.³ Details on the remaining 17 auctions have not yet been made available.⁴ Since detailed information is only available for 97 auctions, some of the figures and tables in this paper consider only this data. Figure 1 shows the number of auctions each year following the amendment of the Act in 2015. The first year saw just six auctions but this number more than doubled over the next two years, to 15 and 14 respectively. The years 2018–19 and 2019–20 saw a surge in auctions (mainly of brownfield mines, i.e., already mined blocks, unlike 'greenfield' mines that have never been mined). This surge was triggered by a provision in the amended Act,

Figure 1: Mineral blocks auctioned, by year⁵



*April to June 2021-22.

Source: Authors' computations (Ministry of Mines, 2021)

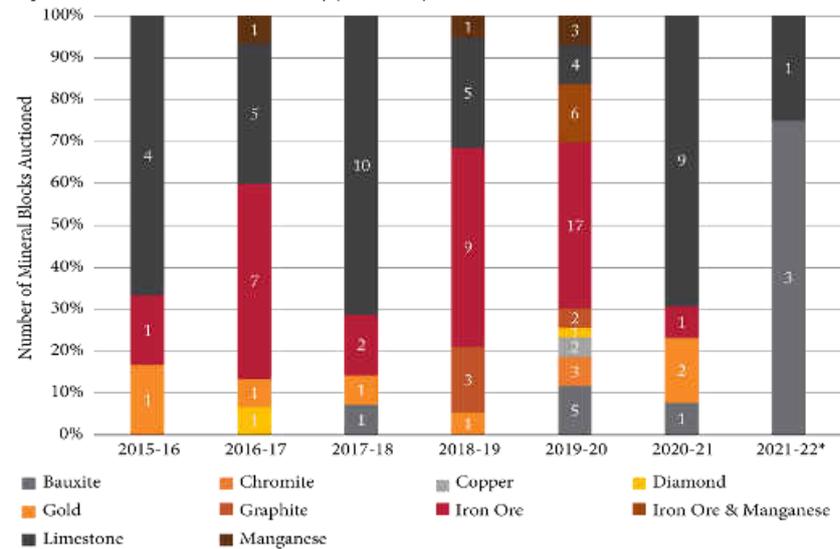
which stated that leases of certain merchant mines would lapse on March 31, 2020 for specific reasons as mentioned in MMDR Act, 2015.

Meanwhile, in an attempt to ensure mineral security and continuation of mining, the government has passed the Mines and Minerals (Development and Regulation) Amendment Act, 2021 [MMDR Act, 2021], which allows for valid clearances to be passed on to the new leaseholder to ensure 'continuity in mining operations even with change of lessee' and to 'avoid repetitive and redundant process of obtaining clearances' for the same mine. The amendments in MMDR 2021 have also resolved various pending cases under Sections 10A(2)(b) and 10A(2)(c)—to do with the rights of those who were granted leases before the MMDR Act, 2015—by stating that a 'large number of mineral blocks' would be put up for auction. Figures 1 and 2 show the increasing number of auctions in 2018–19 and 2019–20, with 43 taking place in 2019–20; more than a third of all auctions since the start of the regime.

Of the 43 mines auctioned in 2019–20, 17 were iron-ore mines, and six were iron ore and manganese mines. With many iron-ore mines closing and the mining leases of several non-captive mines coming to an end in March 2020, there have been speculations that India might become a net importer of iron ore again. This had last happened in 2015 (Dry Cargo International, 2019). However, speedy

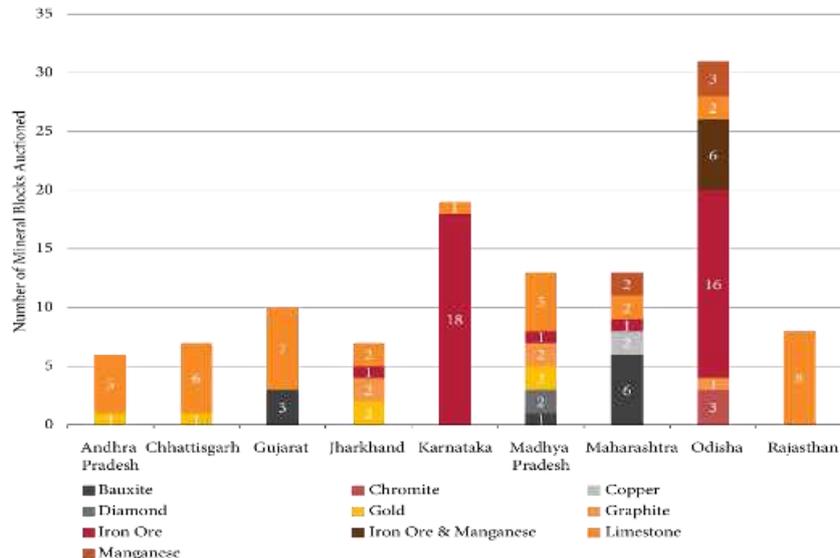
auctions of mines will help increase the indigenous mining of iron ore rather than relying on imports. The year 2020–21 saw the fewest auctions (barring the first year, 2015-16), which may be in part due to the Covid-19 pandemic. There have already been four auctions in the ongoing financial year 2021–22, with many more blocks expected to be auctioned. (HT Correspondent, 2021). A total of 19 auctions have been held in Karnataka, 18 of which were previously operational iron-ore mines. Odisha saw a surge in auctions in 2019–20, with 25 blocks auctioned, of the total 31 in the state. The remaining seven states had fewer than 15 auctions each, primarily for limestone blocks (Figures 3 and 4).

Figure 2: Mineral blocks auctioned, by year and by mineral



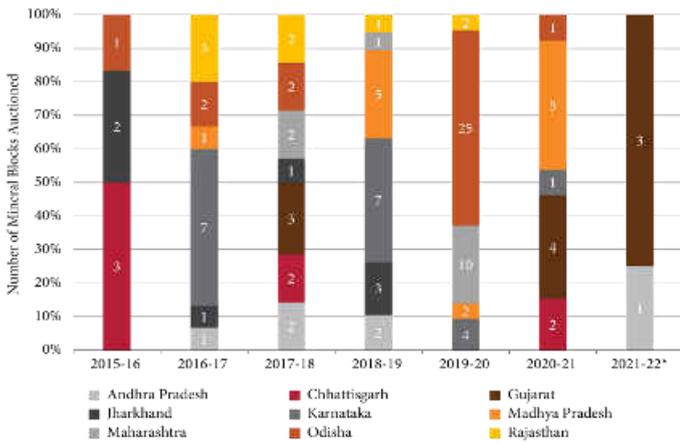
Source: Authors' computations (Ministry of Mines, 2021)

Figure 3: Mineral blocks auctioned, by state



Source: Authors' computations (Ministry of Mines, 2021)

Figure 4: Mineral blocks auctioned, by year and by state



Source: Authors' computations (Ministry of Mines, 2021)

Speedy auctions of mines will help increase the indigenous mining of iron ore rather than relying on imports.

The majority of blocks auctioned were iron ore (and some iron ore and manganese) and limestone blocks, which in total make up 81 of the 114 total auctions (Figure 5). In comparison, there were far fewer auctions of blocks with deep-seated minerals. There are two types of leases that may be auctioned under MMDR Act, 2015: mining leases (MLs) and composite licenses (CLs) (prospecting license-cum-mining lease). The Minerals (Evidence of Mineral Contents) Rules, 2015 Section 7 provides details on the exploration requirements to determine whether a CL or ML would be granted for a particular mineral area. Holders of CLs are given the right to undertake prospecting operations, followed by mining. These licenses are granted in areas with limited exploration and weaker evidence to show mineral content (MMDR Act, 2015, Section 11). The majority of auctions were for MLs (Figures 5 and 6), given that many blocks were previously operational mines (and hence there was sufficient evidence for mineral content). As a result, 105 MLs were granted (in comparison to just nine CLs—one each for diamond, graphite, and manganese; two each for gold, copper and limestone). Composite licenses are generally granted for non-bulk commodities, such as diamonds and graphite, where more exploration is needed before mining operations

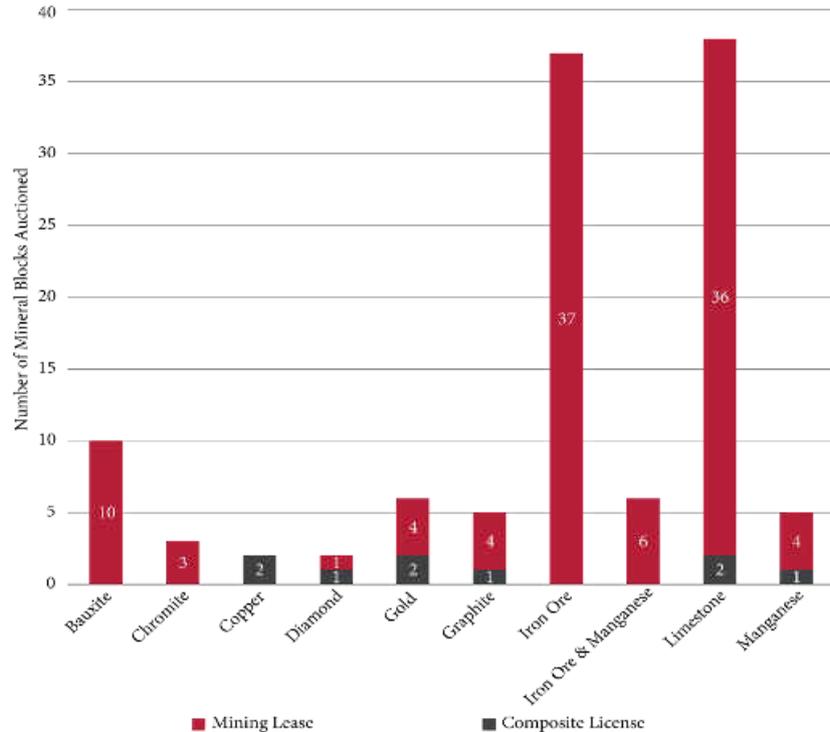
can commence. More must be done to incentivise the exploration and mining of these non-bulk commodities.

An Analysis of the Auctions

Figures 7 to 9 show the winning bids for iron ore, limestone, and other blocks. As detailed

information has not yet been made available, these figures show only the 97 auctions until March 2020. Some of these auctions were won with bids exceeding 100 percent, where mining companies agreed to pay the government more than the value of the minerals despatched, on top of statutory payments and other taxes. Statutory payments consist of royalties, District Mineral Foundation (DMF) contributions (10 percent of royalties for leases granted in or after 2015,

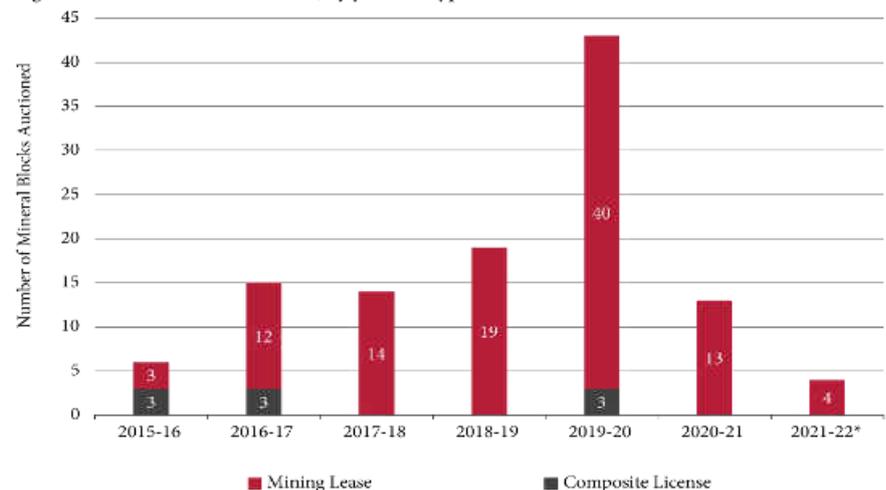
Figure 5: Mineral blocks auctioned, by type of lease



Source: Authors' computations (Ministry of Mines, 2021)

Non-fuel Mineral Auctions: How Fair is the Game, and For Whom?

Figure 6: Mineral blocks auctioned, by year and type of lease



Source: Authors' computations (Ministry of Mines, 2021)

→ and 30 percent of royalties for older leases), and National Mineral Exploration Trust (NMET) contributions (2 percent of royalties). The winning bidder must pay the State government the bid percentage of the value of the minerals mined each month.^{6, 7} The value of the minerals is computed using the Average Sale Price (ASP),⁸ which is published by the Indian Bureau of Mines for each mineral by state and mineral grade, considering the mineral sales done by non-captive miners. These computations are done ex-post.

Computation of auction payment: Monthly auction payment

= quantity of mineral despatched

× Average Sale Price of mineral (by state and grade)

× percentage quoted in auctions

Captive miners may sustain such a business model by absorbing losses from mining activities in their downstream businesses. In contrast, merchant miners will have to find ways to remain competitive. High bids in auctions result in inefficiencies in the economy. Captive miners may choose to only mine as per their requirements which might distort open market prices to their competitive advantage. Additionally, high bidders, hit by the ‘winners’ curse’, may not even start mining operations. Further, mining companies may attempt to cut corners in environmental protection or community welfare, given the high premiums they have committed to the government in auctions. Many iron-ore mines have been auctioned at high premiums. For example, Figure 7 shows the Pratap Pura iron-ore mine in Madhya Pradesh, which was auctioned for 275 percent of the value of minerals in May 2018—the highest bid ever. Of the most recent iron-ore auctions in Odisha, all but two mines had a winning bid of over 100 percent, with the remaining two going for over 90 percent. The bids for the new iron ore and manganese mines were similarly high, with all six receiving winning bids of over 90 percent (Figure 9). The auctions of iron ore blocks can be split into two components: brownfield

mines and greenfield mines. Of the 36 iron ore mines auctioned, 31 were brownfield, and the remaining five were greenfield. While only a few greenfield mines were auctioned, it is notable that the average winning bid for brownfield mines (107 percent) was higher than the average for greenfield mines (70 percent), as is shown in Table 1. Figures 7 and 8 show the mines auctioned (green circles represent greenfield mines and brown circles represent brownfield mines).

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Table 1: Details of iron-ore auctions

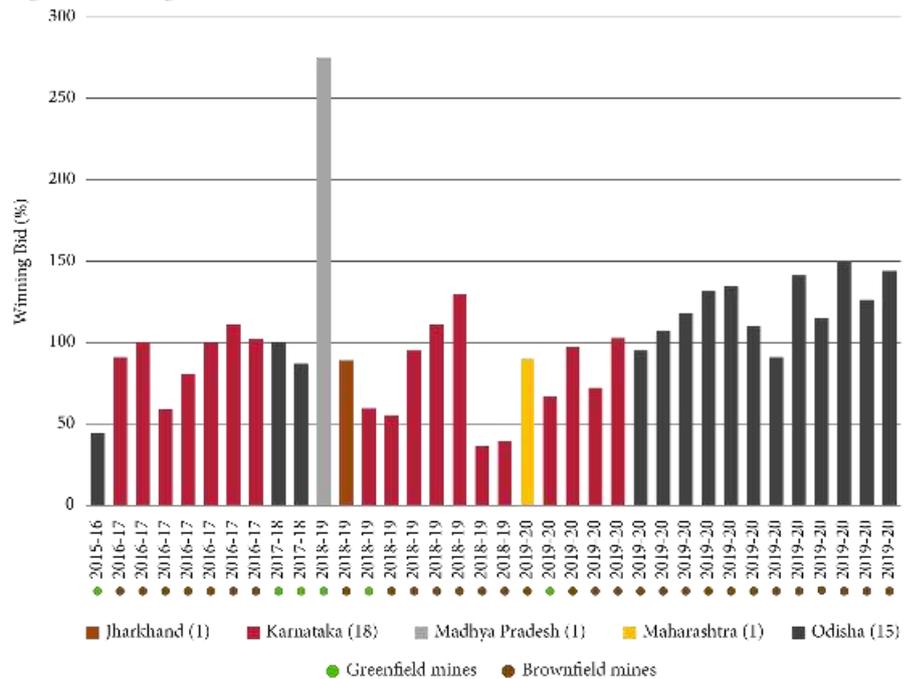
	Brownfield (BF) mines* (31)	% Share of BF resource value	Greenfield (GF) mines* (5)	% Share of GF resource value	Total mines* (36)	% Share of total resource value
Estimated value of auctioned resource	4,12,385	100	39,001	100	4,51,386	100
Expected auction revenue	4,43,601	107	27,305	70	4,70,906	104
Statutory payments (royalty + DMF + NMET)	69,280	17	6,552	17	75,832	17
Revenue to government (50 years)	5,12,881	124	33,857	87	5,46,738	121
Revenue left for mining companies	-1,00,496	-24	5,144	13	-95,351	-21

*Values are in Rs crore. Data up to March 2020.

Source: Authors’ computations (Ministry of Mines, 2021)

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Figure 7: Winning bids at iron-ore auctions



Source: Authors’ computations (Ministry of Mines, 2021)

→ In contrast to the iron ore auctions, Figure 8 shows that greenfield blocks dominated limestone auctions—25 of the 28 mines were greenfield. With these auctions, the average bid for greenfield blocks was 47 percent, higher than the 26 percent average for brownfield blocks. As opposed to iron-ore blocks, the bids for the greenfield limestone mines were higher on average than for brownfield mines, though only a few brownfield mines were auctioned.

Besides iron ore and limestone, six blocks of precious minerals were also auctioned. An interesting case was that of the Bunder diamond mine in Madhya Pradesh. Originally, evidence of the minerals was discovered by the Anglo-Australian mining company Rio Tinto in 2004. However, little progress was made to convert the exploration efforts into a mine, and in 2017, Rio Tinto announced that it would be ‘gifting’ the project back to the Government of Madhya Pradesh (Rio Tinto, 2017). The mine was then auctioned in 2019, and Essel Mining won the ML with a bid of 30.05 percent. Besides iron ore and limestone, peculiarly high bids (ranging from 75 percent to 200.05 percent) were received for the six graphite mines.

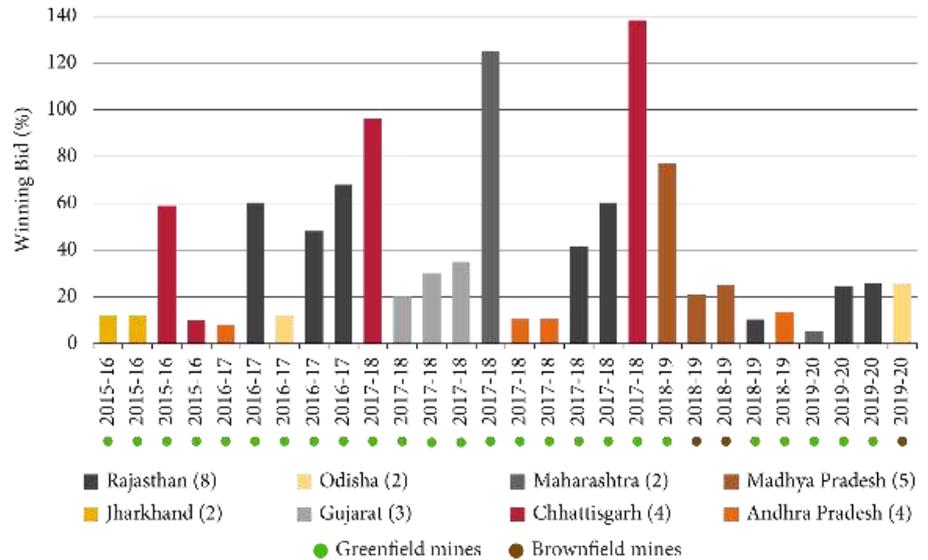
Table 2: Details of limestone auctions

	Limestone mines (28)*	Share of resource value (%)
Estimated value of auctioned resource	1,40,102	100
Expected auction revenue	63,755	46
Statutory payments (royalty + DMF + NMF ¹)	26,657	19
Revenue to government (50 years)	90,413	65
Revenue left for mining companies	49,689	35

*Values are in Rs crore; data up to March 2020.

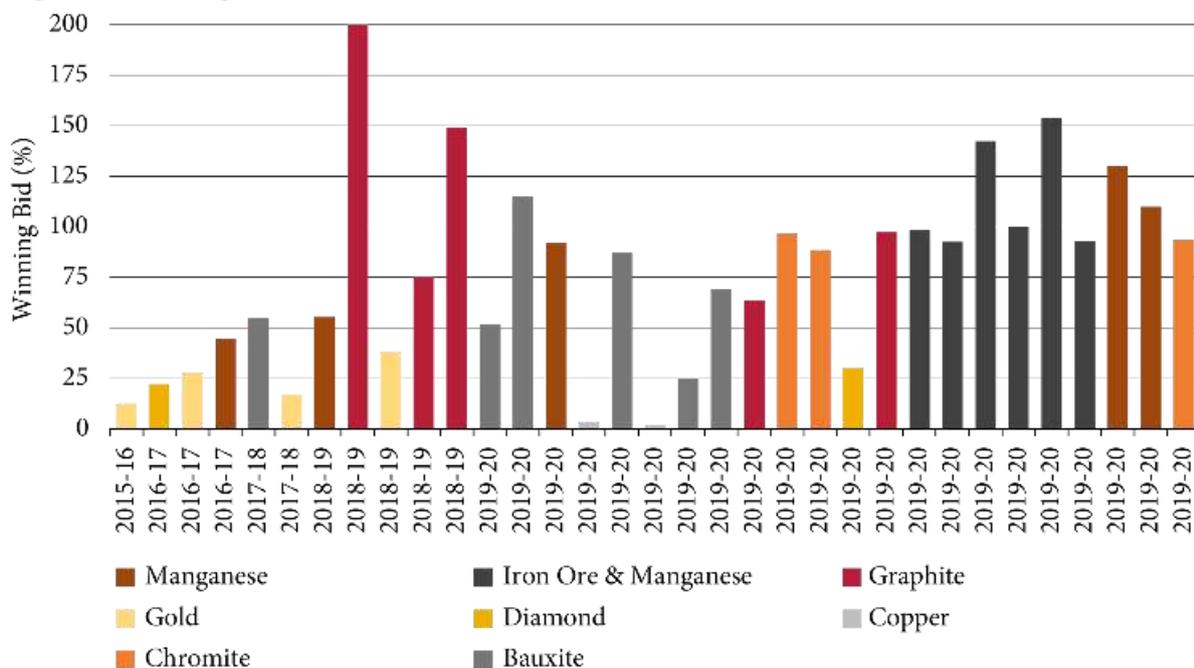
Source: Authors' computations (Ministry of Mines, 2021)

Figure 8: Winning bids at limestone auctions



Source: Authors' computations (Ministry of Mines, 2021)

Figure 9: Winning bids at other auctions



Source: Authors' computations (Ministry of Mines, 2021)

➔ Earnings for the Government

Using the results of the auctions and exploration data on the estimated quantity of mineral resources, the Ministry of Mines makes some implicit assumptions to calculate how much State governments can expect to earn over the lifetime of the mines. The auctions show that winning bids have been excessively high, leaving very little for the companies. Tables 1 and 2 show estimated earnings from iron ore and limestone auctions respectively, while Table 3 reflects the overall earnings of State governments from all auctioned mines. The assumptions made in computing this estimate apply to all tables:

- The estimate of the quantity and grade of resources in a mineral block is not the final quantity that can or will be mined.
- The ministry uses the average sale price (ASP) of the mineral (by state, and by grade) to determine the value of the minerals.
- This ASP will fluctuate over the lifetime of the mine and will likely not reflect the average value used when the ministry made its estimates.
- Of the 97 blocks auctioned, nine were for CLs. However, there is no guarantee that the prospecting efforts shall lead to a viable mining operation, and this will result in lower-than-expected government revenues.

Table 3: Estimate of government earnings from auctions

	Values in Rs crore	% of resource value
Estimated value of resource	80,227.04	100
Contribution from auctions	692,205.17	86.3
Royalty	119,087.13	14.8
DMF	11,908.71	1.5
NMET	2,381.75	0.3
Total statutory (royalty + DMF + NMET)	133,377.59	16.6
Total govt. revenue (auction + statutory)	825,582.75	102.9
Remaining with miners	-23,455.71	-2.9

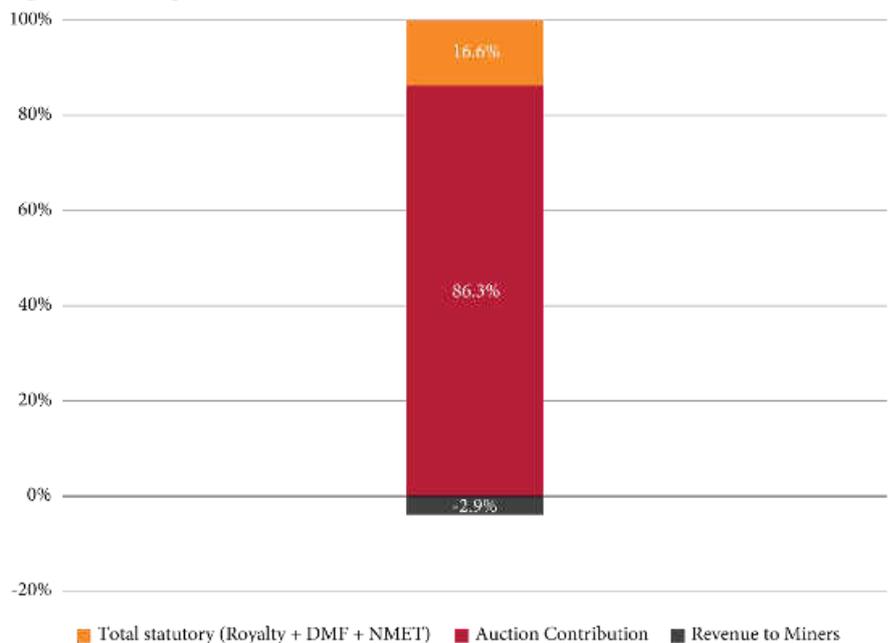
Source: Authors' computations (Ministry of Mines, 2021)

For the 97 mines auctioned, the miners will, on average, pay the respective State governments 102.9 percent of the value of minerals. This is primarily due to the large winning bids for the 42 auctions of iron-ore and iron-ore and manganese blocks. These bids consistently exceeded 50 percent and in 22 auctions exceeded 100 percent. Over and above the payment of operational expenses, auction commitments, and statutory payments, miners also need to pay corporate taxes, forest and wildlife protection payments, and stamp duties. All these costs may make the business model unsustainable, leading to dampened production, corners being cut (e.g., health and safety, environment, and community welfare) or a forfeit of the lease.

The auctions show that winning bids have been excessively high, leaving very little for the companies.

Non-fuel Mineral Auctions: How Fair is the Game, and For Whom?

Figure 10: Break-up of the total value of minerals



Source: Authors' computations (Ministry of Mines, 2021)

Where Are The Greenfield Mines?

Many of the auctions were of brownfield merchant mines where the leases had lapsed in March 2020 (Figure 11). Section 8A of the MMDR Act, 2015 states that non-fuel mining leases would be valid for 50 years. Additionally, the leases of older merchant mines in operation for longer than this period would be allowed to continue mining operations till March 31, 2020, while the leases of similar captive mines would be extended till March 31, 2030. A total of 334 mines were impacted by this section of the act in total, of which 48 were working mines, primarily producing iron ore which accounted for 25–35 percent of the country's total output (Patel, 2019).

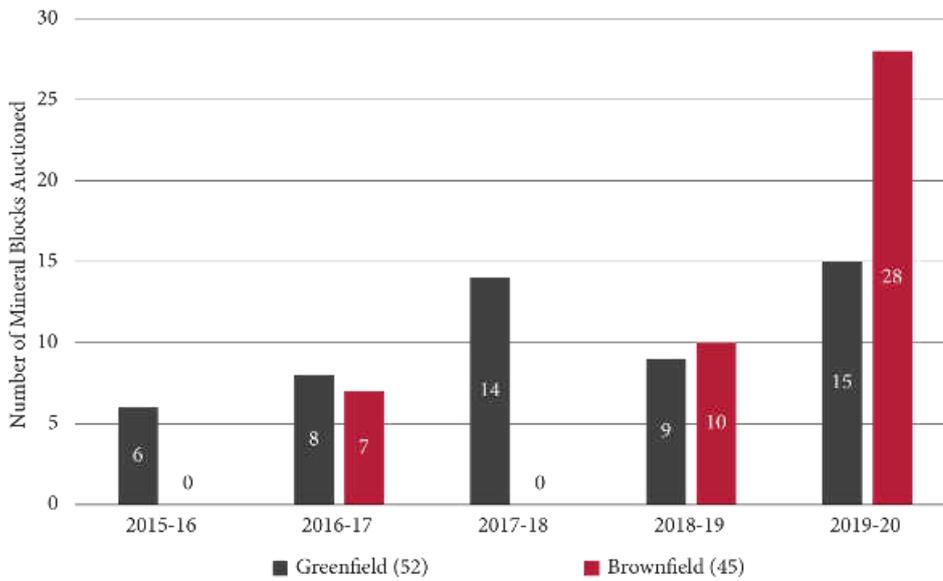
Of the 97 auctions until March 2020, 45 were of brownfield blocks, i.e., mines previously in operation. There were 52 auctions of greenfield mines,

including those with deep-seated minerals such as copper, diamond, gold, and graphite. However, according to the Federation of Indian Mineral Industries (FIMI), no greenfield mining project has come into operation from the auction process (Iyengar, 2021). The Central government has attempted to facilitate a seamless transition between the leaseholders through an amendment of the MMDR (this was done with the Mineral Laws (Amendment) Act, 2020, which amended provisions of both MMDR, and the Coal Mines Act), such that the new miner would be able to start operations without acquiring new environmental clearances for two years. Given India's untapped geological potential and the imminent demand for critical minerals for green technology manufacturing, there is an urgent need to enable the exploration and auctioning of greenfield deep-seated mineral assets and ensure their early operations.

Given India's untapped geological potential and the imminent demand for critical minerals for green technology manufacturing, there is an urgent need to enable the exploration and auctioning of greenfield deep-seated mineral assets and ensure their early operations.



Figure 11: Auctions, by year and type of mine



Source: Authors' computations (Ministry of Mines, 2021)

Mines and Minerals (Development and Regulation) Amendment Act, 2021

The Mines and Minerals (Development and Regulation) Act, 1957, was amended in March 2021 through the MMDR Amendment Act, 2021 (March 28). Several changes were made to improve mining and create a level playing field between captive and merchant miners. With this amendment, captive miners may now sell up to 50 percent of the minerals produced after meeting the requirement of their end-use plants and upon payment of additional amounts, compared to 25 percent before. This should help reduce the wastage of minerals and increase their supply in the open market.

Public-sector mining companies are also being brought to the same playing field as private-sector miners. While public-sector companies may be allocated mining lands without going through the auction process, they will be required to make additional payments to make up for the auction payments the state exchequer would have otherwise received if allocated to private-sector companies. More changes have been made to the clearance transfer system, with auctioned brownfield mines carrying any existing and valid clearances to the new successful bidder. The aim is to 'avoid the repetitive and redundant process of obtaining clearances again for the same mine'.⁹ Issues relating to the pending cases under Sections 10A(2)(b) and (c) have also been cleared, and many mineral blocks are set to be auctioned. The government has decided to reimburse the expenses incurred by the mining companies, through funds from the NMET. The Non-Exclusive Reconnaissance Permit (NERP) has been done away with; there had been no takers since its introduction

in 2015.

Thoughts on an Efficient System of Auction Allocations

The auction system needs a thorough review. Mentioned below are a few observations in this regard.

1. The promised high returns are the potential financial reward for the states, if the winning miners can overcome the 'winner's curse' paradigm (Vijay Kumar & Sinha, 2020), and accomplish scheduled tasks. However, even if the miners succeed, the idiosyncratic promised over-payment acts as a tax on merchant miners and the economy.
2. The cost overspend would have to be recovered from downstream operations of these miners, creating inefficiencies of resource allocation in mining and downstream activities. In a general equilibrium framework, the economy shall have to bear the cost of a less than efficient allocation of productive resources.
3. As per discussions with senior officers of various mining companies and government officials, the reasons for overbidding may be many:
 - a. Most relate to the security of procuring raw materials. The cost of minerals may only be a small proportion of operations cost for downstream plants, but guaranteeing mineral supply would be important to the producers.
 - b. Additionally, some mining companies might have bid high in the hope of favourable policy-changes in the future.

4. The aftermath of the auctions appears to be unfavourable with regard to boosting mining production in India:

- a. Some auctioned leases were surrendered, even before mining operations could begin.
- b. Some others, who started production, failed to meet their agreed-upon production outputs per their Mine Development and Product Plans (MDPA).
- c. This will adversely impact the government's estimates of earnings, and the availability of mineral resources for further processing.

5. Furthermore, in the context of the Covid-19 pandemic—while global iron-ore prices are rising due to increasing demand from a recovering China (Mining.com, 2021)—iron-ore production in India has been doubly hampered: first by the pandemic, and secondly by the delay in continuing, or starting, operations of mines successfully auctioned over a year ago.

6. It is unlikely that the auction mechanism will be reverted to the first-come, first-serve system used in India earlier, which is still used in other mineral-rich countries. However, it may be worth considering a policy that differentiates the allocation mechanism between bulk and deep-seated minerals. It is not feasible to estimate the quantities of deep-seated minerals in the same vein as bulk minerals, without exploration using ore-specific geological expertise. This is evident from the fact that there have been very few auctions of these minerals and from the limited number of deep-seated mineral discoveries in India.

7. Moreover, many of these minerals are critical for manufacturing clean energy technologies, electronics, and national security applications. Therefore, the process of allocation of mineral rights must be sensitive to incentivising exploration—including the right to mine, which is prevalent in many other mining jurisdictions.

8. Some thought may be given to honing the existing auctions system to achieve a more efficient mineral allocation regime:

- a. This includes placing multiple mineral blocks on auction under a pre-announced auctions calendar.
- b. It may also help to change the auctions from a two-stage to a single-stage system.
- c. Additionally, the ascending forward bidding process may be changed to a single sealed bid. These changes would help reduce the scarcity mindset, as miners will know when more mineral blocks will be up for auction, and, therefore, it would not encourage competitive overbidding.

9. Finally, there must be a relook at the two mineral taxation systems currently in place—royalties and auctions—as past baggage is being carried forward in a new regime. Paul Milgrom and Robert Wilson, both of Stanford University, won the No-

bel Prize in 2020 for their pioneering theoretical work on how auctions work, and for their insights on how to innovate auction formats for selling goods and services that are not amenable to efficient sale in a traditional manner (The Nobel Prize, 2020).

It would be worthwhile to imbibe learnings from their work to further improve the auctions system in India.

- **Rajesh Chadha & Ganesh Sivamani**

Source: www.csep.org

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Odisha Iron Ore Mine Block Auction Summary—Phase II

Mine Name	Area (Ha)	Total Geological Resource (Mnt)	Average Fe	Technically qualified bidders	Preferred bidders	Premium %
Nadidih BICO iron ore block	74.5	27.043	60.05%	ESL Steel Ltd, Ramgad Minerals, Rungta, Arcelor Mittal, Orissa Metaliks, Bhushan Power & Steel and Shri Jagannath Power & Steel	Electrosteel Steels (ESL)	95.60%
Kasia iron ore and dolomite block	194.196	278.04	63.21%	Essel Mining, Tata Steel, Electrosteel, AM/NS India, Rungta Mines. MSPL and JSPL.	JSPL	118.10%
Nadidih Feegrade iron ore block	117.206	23.69	60.41%	ESL Steel Ltd, Ramgad Minerals, Rungta. Arcelor Mittal and Orissa Metaliks	Electrosteel Steels (ESL)	92.30%
Gandhalpada iron ore block	241.1	314.37	60.48%	Arcelor Mittal, Esse! Mining, JSPL, MSPL, Rungta Mines, Shri Jagannath Steel and Tata Steel	Tate Steel	141.25%
Jumka Pathriposhi Pahar iron ore block	158.509	140.28 (total net iron ore resource)	56.14%	Rungta mines. MSPL Baldota, Esse! Mining, Arcelor Mittal, JSPL, Shyam Metalik, Vedanta	Rungta Mines Limited	110.15%
Purheibhal iron ore block	64.337	40.04 (at Fe 55%)	59.72%	Rungta mines, Jagannath Steel, Ramgad Minerals, T P Sao & Sons. Amalgam Steel, Esse! Mining, Shyam Metaliks, Arcelor Mittal	Rungta Mines Limited	124%
		2.76 (at Fe \geq 45% to 55%)	49.89%			
Chandiposhi iron ore block	131.58	35.86 (at Fe 55%)	58.81%	Ramgad Mining and Mineral, SJSPL, Rungta mines, Bajrang Steel, Amalgam Steel, TP Sons, KJS Ahluwalia, AM/NS India, JSPL, Vedanta. Bhushan Power	Rungta Mines Limited	113.10%
		11.21 (at Fe \geq 45% to <55%)	47.67%			
Dholtapahar iron ore block	60.508	16.74 (at Fe55%)	62.00%	Kashvi, On Sairam Steel, TP Sao & sons, Rungta Mines, Ramgad Mining & Minerals, Bajrang Power, Lal Trader, Sri Jagannath Steel, and Kai steel.	Kashvi International	126.55%
		7.18 (at Fe \geq 45% to <55%)	49.30%			
Netrabandha Pahar (West) iron ore block	74.37	15.765 (at Fe 55%)	63.50%	Ramgad Minerals, TP Sao, RML, Kashvi, Sri Jagannath, Bajrang Power, Lal Traders, Raga Tradecon, Shyam Steel, Saroj Patnaik, Tarini Minerals, Transtek, JSPL, SN Mohanty, Vedanta, Bhushan Power, Sunflag and Neo Metaliks	Raga Tradecon	139.50%
		1.5 (at Fe \geq 45% to <55%)	49.37%			
Teherai iron and manganese mine	116.572	19.87	53.01%	Auction cancelled on limited participation		

Source : SteelMint

Unlocking Huge Potential of Mineral Exploration;

Handing Over Ceremony of 100 G4 Mineral Blocks Report by Geological Survey of India for Auction as Composite License

The MMDR Amendment Act, 2015 ushered in transparency in the allocation of mineral concessions in terms of Prospecting License and Mining Lease. In this continuous endeavour, the Mines and Minerals (Development and Regulation) Amendment Act, has been further liberalized in March 2021. The recent amendment is expected to increase employment and investment in the mining sector, increase the revenue to the States, increase production and time bound operationalization of mines, maintain continuity in mining operations after change of lessee, increase the pace of exploration and auction of mineral resources.

With this amendment, in order to realise the vision of 'Atma-Nirbhar Bharat', the Geological Survey of India has delineated 100 geologically potential mineral blocks for auction.

Handing over of these 100 Reports to the

State Governments will ensure continuous supply of minerals in the country and more revenue to the State Governments by bringing more number of mineral blocks under auction.

In a function to hand over the above reports, to be held in Delhi on 8th September, 2021, Minister of Mines, Coal and Parliamentary Affairs Shri Pralhad Joshi along with Minister of State for Mines, Coal and Railways Shri Raosaheb Patil Danve will be the Chief Guest.

With time, the frequency of major discoveries of an economically viable mineral deposit has decreased and this is a worldwide phenomenon despite tremendous technological advancements. Hence, the situation warrants, out of box thinking, new approaches, enhanced cooperation and enthusiastic participation from the Government and private sectors. In the above scenario, the handing over of 100 reports by GSI to state governments attains crucial importance to the mining sector, industrial growth and employment generation.

The GSI would give the reports of these 100

mineral blocks on Wednesday to state governments concerned in the presence of Union Minister for Mines and Coal Pralhad Joshi, said a senior officer of the Mining Ministry.

He said the move would really help state governments to auction these blocks to speed up the continuous supply of minerals in the country. It would further help state governments to earn more revenue by bringing more mineral blocks under auction, he said.

In March 2021, the Modi government had amended the MMDR Amendment to liberalize the mining sector and usher in more transparency in its auction. The new amendment was also aimed to increase employment, private investment in the mining sector and increase the revenue to the State governments.

The new Act is also going to help in increasing production, time bound operationalization of mines, and in maintaining continuity in mining operations after change of lessee, the Ministry said.

Odisha's decision to auction virgin mines raises environmental concerns

Odisha is proposing to auction seven fresh mines which together could result in the loss of about 4,000 acres of forest land including the biodiversity-rich Karlapat and Gandhalpada forests.

These forests are not only a source of livelihood for the indigenous communities, but is also crucial to their cultural identity as it is considered an abode of their gods.

Environmentalists allege that the state

government has not consulted the communities who will be impacted by mining activities and is forcing their decision on the indigenous communities.

On August 9, 2021, as the World's Indigenous People Day was being celebrated, hundreds of people from villages inside and on the periphery of the picturesque Karlapat Wildlife sanctuary in the Kalahandi district of Odisha gathered to protest against a proposed bauxite

mining site in the area. The men and women, mostly from indigenous communities, had organised a similar protest last year as well when the government had conducted soil testing in the area.

In July 2021, the Odisha government issued a notice inviting tenders for the auction of 11 mines (seven fresh blocks and four lease renewals) in the state. The activists claim that the seven new mines are expected to result in



→ the loss of 4,000 acres of forest land.

The 11 mines include seven mineral blocks of iron ore (Nadidih BICO, Purheibahal, Chandiposhi, Jumka Pathiriposhi Pahar, Dholtapahar, Netrabandha Pahar, Gandhalpada), two mineral blocks of iron ore and manganese (Nadidih, Teherai), one mineral block of iron ore and dolomite (Kasia) and one mineral block of bauxite. Karlapat is the bauxite virgin mineral block that will go down the hammer.

Karlapat forest is part of the Karlapat Wildlife Sanctuary, which is located over 450 kilometres from Odisha's capital city of Bhubaneswar. The roads leading to the forest have warning signs citing elephant presence in the area. In the heart of the forest lies the Khandualmali hill, believed to be the abode of the Kondh (an indigenous community) goddess *Khandual*. Villagers are concerned that the proposed mining activity, will affect both the forest and the hill.

The move for opening untouched forest areas for mining by the state government has, however, led to environmental activists expressing fear about an impending 'ecological disaster' in the state. They claim that even as a proper impact assessment of the mining projects is yet to be carried out, preliminary analysis suggests that the mining activity will severely impact the flora and fauna of these areas. The activists claim that close to 4,000 acres of forest land in the state, mostly in the Kendujhar and Sundargarh districts, will be destroyed due to the auction of these seven fresh mines. However, there is no official estimate as yet.

In Kendujhar's Gandhalpada forest (iron ore reserve) alone, almost 900,000 trees will have to be felled to carry out the mining activity. Of those, almost 73 percent are sal trees, which takes 150 years to mature. Similarly, activists claim the mining activity in the Karlapat area is expected to impact more than 300 perennial streams and elephant corridors in the area.

"At a time when we are facing a climate crisis, the mining activity spot in Gandhalpada

will destroy a deep forest area. Karlapat is also an equally sensitive forest. The forests are for future generations and not for the mining industries. Any loss of forest, river or natural resources is directly related to the loss of livelihood of the tribal community. The forests are not only their basis of economic activity but are also their cultural identity," environmentalist Prafulla Samantara, who is leading the movement, told Mongabay-India.

"There is also no emergency need of iron ore in the state as the existing industries already have captive mines to produce steel. So, why there is such a hurry to destroy the valuable forests of the state which will take at least 500 years to replenish if destroyed now?" he questioned.

Odisha is among the mineral-rich states of the country and is a leader in the production of minerals like iron ore, bauxite, coal. According to Odisha's Economic Survey 2020-21, the state contributed 34.3 percent of the total mineral production in the country. Overall, the mining sector plays a crucial role in the state's economy and similar to the central government, the state government is also pinning hopes on mining to revive the economy after COVID-19. In fact, the Odisha government on September 9, announced, after a meeting with the union minister of mines, that it is preparing to auction five more mines in the next two months.

No consultation with mining-affected communities for auction

A month after inviting tender, the Odisha Government started the first stage of the e-auction process. The last date for the purchase of tender documents was on August 19, 2021, while the bid submission was completed on August 24. However, so far, the local activists claim that the communities who will be directly impacted have not been consulted in the matter, nor any Gram Sabha has been held.

"Usually, the local people should be consulted before any auction. A Gram Sabha is held, which approves or disapproves of the mining activity in its area. Legally, it is not incorrect to conduct the auction first and then hold

Gram Sabha, but the process is wrong. If the auction is held first and the lease is awarded, the company getting the lease is also in the middle of the river. Even after winning the bid, the lease is not guaranteed until Gram Sabha (village council) approves. So, the process should be bottom-top approach and not vice-versa," said Biswajit Mohanty, an environmental activist who has also raised his concerns regarding the fresh mining bids.

Moreover, the activists also alleged that similar to the way mining activities continued unabated during COVID-19 lockdowns, the state government is intentionally rushing with the project while the public attention remains on the pandemic. In fact, they accused the state of resorting to illegal means to get the necessary environmental clearance.

Mining controversies in Odisha are not new

Previously too, Odisha has been at the centre of mining controversies involving indigenous communities. The most highlighted dispute between the state and the tribal people was related to Vedanta's alumina refinery in Lanjigarh at the foothills of Niyamgiri. In 2013, the Supreme Court was in favour of the locals, giving the power to the Gram Sabhas to take a call on the matter. In what was called a historic environmental case, all the 12 villages inhabited by the Dongria Kondhs had rejected the project.

In 2019, another controversy erupted when at least 40,000 trees were cut in the month of December in Talabira village of Odisha's Sundargarh district for an opencast coal mining project of the Centre-owned Neyveli Lignite Corporation Limited (NLC). There were widespread protests with the locals claiming 'forged Gram sabhas' were conducted to get the clearance. Despite a call to stop the felling of trees, the forest was razed.

Besides, the mining scam in Odisha was unearthed in 2009, when a Commission led by Justice M.B. Shah probing the mines had cited several instances of excessive mining in the state. Recently, Sarda Mines, a leading mining company was slapped with a penalty of Rs. 20.56 billion (Rs 2,056 crore) for excessive

→ mining. The mining leaseholder in Keonjhar district had raised at least seven times more iron ore than the clearance.

However, this time as the state government has begun the e-auction process, environmental activists are prepping up for a long battle. Days after the notification of e-auction emerged, the activists wrote to the Odisha

Chief Minister Naveen Patnaik, requesting him to re-think the decision. On August 25, political opposition parties and several citizen groups joined hands with the activists to chalk the future course of action. A fresh memorandum is expected to be sent to the Chief Minister soon.

“It is the need of the hour to have an experts’

committee evaluate the ecological losses and consequences due to the endless mining activities in the last 50 years. The government should not be hungry to get revenue through finishing non-renewable mines and minerals. We are ready for Jan Andolan. The protest will pick up from here,” Samantara said.

-Source: Mongabay

‘Single window’ process for all environment clearances on anvil

The Union environment ministry is in the process of setting up a ‘single window’ process for all clearances pertaining to forest, environment, wildlife and coastal regulation zone, people familiar with the matter said

In an office memorandum (OM) on September 7, the ministry directed all industries, mining companies and infrastructure projects to upload digitised records of clearances granted to them in the past and records of compliance with the directions issued to them under the environmental clearance.

“All industries in the country have been addressed through this OM. Some environment clearances were issued 24 to 26 years ago, so their records are not digitised and often not available. Forest and wildlife clearances have been granted since 1970s. We are asking all those records to be uploaded on the Parivesh website which maintains records of environment, forest, wildlife and CRZ clearances and minutes of meetings where infrastructure projects are considered for clearance. This will help us monitor whether industries are complying with conditions prescribed to them. It will also help crackdown on those that are not complying,” a senior environment ministry official said, preferring anonymity.

The ministry doesn’t have a composite number of projects that have been granted permission by the environment ministry in the country yet. “The Forest Conservation Act came in 1980 while the Wildlife Protection Act

came in 1972, so some projects would have taken clearances nearly 40 years ago. Around 7,000 environmental clearances have been issued by the Centre since 1994 when the environment impact assessment notification came through. But there are a very large number of small industries which are monitored by state level authorities which also need to be counted and brought under the centralised system,” the official explained.

In a similar memorandum on August 4, the ministry had requested all category A (large projects that require prior environmental clearance) and category B (smaller projects monitored by state level bodies) industries to upload information related to clearances granted to them.

“It has been observed that many of the project proponents are yet to upload the desired information. This has been viewed seriously by the competent authority. In view of the above, all project proponents who have not yet uploaded the desired information are once again requested to do so at the earliest and latest by September 13,” the latest OM said.

Other senior ministry officials said while centralised processing centre (CPC Green) was conceptualised recently, the vendor to upload all data and make them available in an analytical format is yet to be identified.

“We have started nudging industries to upload digitised data. It will take time because some may find it difficult. The idea is that we have the clearance conditions of all projects,

infrastructure, industry etc in an analytical format. The industry will also be benefited because we have conceptualised a single form for all clearances, be it environment, forest or wildlife. These will be processed in a time-bound and transparent manner,” the official said.

On the government’s move for a centralised system, Nandini Chowdhury, who has been a consultant for environmental clearances to various industries for over 20 years, said: “I think this centralised system is going to increase transparency. Civil society and the public can track which industries are complying with norms and what kind of data they submit. This is going to build pressure on flouting industries. That’s my impression. Moreover, many industries were not submitting any data or compliance reports even though they were supposed to under the environmental clearance granted to them. Those industries will be in a soup now.”

While HT has written to Federation of Indian Chambers of Commerce & Industry (FICCI) for a response on the new system, an office bearer said they will study the OM and reply accordingly.

“Such processes may streamline the paperwork for agencies seeking prior approval, but does not assure any good environmental outcome. The need for feet on the ground for scrutinizing applications for approval, site specific monitoring and creating deterrence against noncompliance safeguards has gotten

even more urgent a post covid, climate challenged world. Digitizing filing and applica-

tion may be needed, but cannot be an end in itself. We need regulatory reform that is

focused on environment justice,” said Kanchi Kohli, legal researcher, Centre for Policy Research.

-Source: HindustanTimes

A possible link basin between Bamer basin & Jaisalmar Basin and minerals of economic importance - V.P. Laul

During mapping(FS 1981-82) glauconite was discovered in newly dug well dump material near Village Mashuriyan Jaisalmer district, Laul, V.kumar, Sahiwala, Sen & Chakraborty, GSI unpub.Report, 1984.

Rocks of dump material included sandstone, chocolate shales, grey to black sulphurous shales, siderite, glauconitic sandstone, and argillaceous limestone with fossil fragments which were clubbed together and designated as **Mashuriyan Beds** and assigned presumably Cretaceous to Paleocene age because of occurrence of similar beds below Khuiala limestone (Lower Eocene) in Khyalo Talao well section.

Sections of surface and subsurface in sand covered areas are given below to understand Geological set up of area having lithological formations/ units of both Jaisalmer and Barmer basins thus though area is mainly sand-covered but becomes interesting and important geologically.

Lithostratigraphy of Khuiala Formation (Paleocene- Lower Eocene) in Sam area, Jaisalmer by Laul

Lithology	Formation & thickness	Age
Limestone, nodular limestone & hard compact limestone	Khuiala Formation 10-12m	Lower Eocene
Limestone , foraminiferal limestone & shale bands	Khuiala Formation 5m	Lower Eocene
Bentonitic clays-fullers earth- marl - shale	Khuiala Formation 7-9 m +	Paleocene

Ref: Sen, Laul, & V. Kumar, GSI unpub. Report, FS 1980-81

Investigation for glauconite and sub- surface Lithostratigraphy, Mashuriyan area

Boreholes of glauconite investigation intersected limestone and clays of Khuiala Formation, thick argillaceous/ carbonaceous(glauconite bearing) sequence and arenaceous sequence, below Khuiala Formation and have been shown as units of Sanu Formation- Arenaceous sequence as Lower unit and Argillaceous sequence as Upper unit, Binod Kumar & Sahiwala, GSI unpub Rept. 1989, Rec GSI 118(1)& 119(1) V.Kumar and Bakliwal, 2005, Potash in India, GSI Misc Pub 65.

Generalised Geological set-up of Mashuriyan area mainly after Binod Kumar and Sahiwala (op cit)

Age	Formation	Lithology	Thickness
Recent		Aeolian sand & sandstone	3 to 4 m
Pleistocene	Shumar Formation	Coarse to gritty sandstone with ironstone nodules White to yellowish kaolinitic clay, calc.to ferruginous sandstone with ironstone nodules	8 to 15 m 3 to 8 m
Paleocene to Lower Eocene	Khuiala Formation	Limestone, chalky limestone ,Nummulitic limestone with shale bands, sub - bentonitic clay & marly limestone	20 m
Paleocene	Sanu Formation Remarks- nomenclature mainly based on investigation for glauconite	Greyish to black shale, Glauconite bearing and pyritiferous sandstone, lignite/ carb. shale, clay, micaceous carb. shale, glauconitic sandstone/ shale, greyish black shale Siltstone/sandstone, whitish silty sandstone	200 m

Additional Ref: V. Kumar and Bakliwal (op cit)

→ Well section of Khyalo Talao (Nadi- Pond) area, Jaisalmer district

Lithology	Thickness	Formation	Age
Loose sand and sandstone	7.00m	-	Recent
a. Hard calc. shale/ limestone b. Ironstone/fragmental ferruginous zone c. Coarse gritty sandstone	a.8 m b.20 m c.20 m	Shumar Formation	Pleistocene
Foraminiferal limestone	9 m	Khuiala Formation	Paleocene to Lower Eocene
Grey to black shale zone with ferruginous nodules with pyrite in core	35 + m	Mashuriyan Beds	Paleocene

Ref: Laul, et al, 1984 (op cit)

Mashuriyan Area:Subsurface Geology and possible correlation

Mashuriyan Beds of Mashuriyan area are located west of N-S trending Mashuriyan Fault nearly at (70°30'), Laul, Journal Geol. Soc Ind. Sept 2001, near Samdani and also west of NW- SE trending Kanoi Fault. This area is near to Barmer basin and lithologically correlatable with carbonaceous -lignite and glauconite bearing Lower member of Akli Formation(Paleocene) and not with Sanu Formation (Paleocene) located east of Kanoi Fault. The sandstone unit below the glauconite bearing argillaceous/ carbonaceous unit is perhaps of Fatehgarh Formation ? (Cretaceous to Paleocene/ Paleocene?).

Some lithological similarities between geological set up of Mashuriyan area Jaisalmer basin and Barmer basin

Akli Formation-Barmer basin	Mashuriyan Beds - Jaisalmer basin
Akli Formation(Paleocene): 1. Mainly carbonaceous/ argillaceous sequence 2. Contains number of lignite seams 3. Contains low grade grade glauconite, V. Kumar & Bakliwal (op cit) 4. Contains siderite bands, Tripathi, Kumar & Srivastava Geologica Acta, Vol.7, Nos 1-2, March-June 2009	Mashuriyan Beds: 1. Mainly argillaceous/ carbonaceous sequence 2. Contains carbonaceous shale/ lignite 3. Contains good grade glauconite 4. Contains siderite associated with glauconite, XRD studies, Laul et al 1984 (op cit) and Binod Kumar and Sahiwala, (op cit)

All above observations and evidences suggest a possible link basin between Barmer and Jaisalmer basins, possibly developed at the same time when the Barmer basin developed.

A possible Pre- Quaternary Geological set up of Link basin is given below

Formation	Age	Lithology
Quaternary sediments Recent sand and Shumar Fm	Recent to Pleistocene	Sand, Kankar, gritty sst with ironstone nodules, kaolinitic clay, calc- ferruginous sst.
Khuiala Formation	Lower Eocene	a. Limestone, chalky limestone b. limestone with shale/ clay bands
Mashuriyan Beds Argillaceous/ carbonaceous unit (Akli Formation- Lower Member)	Paleocene	Greyish to black shale, glauconitic sandstone/ shale pyritiferous sandstone, lignite/ carb. shale, clay, micaceous carb. shale
Arenaceous unit- Mashuriyan area (Fatehgarh Formation?)	Cretaceous to Paleocene/ Paleocene	Siltstone/sandstone, whitish silty sandstone Base not intersected in boreholes

➔ Possible Tectonic set up of Link basin in sand covered area

It appears the basin is controlled by a set up of faults ,parallel/ sub parallel to ENE- WSW trending Fatehgarh Fault and N-S trending(Mashuriyan Fault) to NNW- SSE/NW-SE faults. Northern limit of link basin appears to be E-W or ENE- WSW trending fault somewhere between lat. 26°43' & 26°45' which divides the main Khuiala limestone outcrop area in north and bentonitic clays and absence/ poorly exposed limestone of Khuiala Formation, in south.

Economic Minerals and prospects:

Oil & gas: Link basin has sandstones (Fatehgarh Formation?) and limestones (Khuiala Fm) which are considered good reservoir rocks. Basement of Link basin is suspected to be Mesozoic formations having shales(Source rocks) in Jurassics and sandstones (Reservoir rocks) in upper Jurassic to Cretaceous formations.

Lignite: lignite is likely to be intersected in the southern part of basin at Khyalo Talao or further south in argillaceous/ carbonaceous sequence in association with low grade glauconite.

Glauconite: Medium to good grade glauconite with some lignite seams is expected between Mashuriyan area and Khyalo Talao area. Mashuriyan area has 21.5 million tonnes glauconite resource with a grade of 4.5 % K₂O.

Limestone: Limestone occurring over glauconite in Mashuriyan area may be industrial grade and may increase the value of glauconite deposits.

Fatehgarh Formation in Barmer basin has phosphorite and Akli Formation mineable bentonitic clays and siliceous earth deposits with prospects of phosphorite. Khuiala Formation in adjoining Sam area has mineable resources of cement to high/ steel grade limestone and some bentonitic clays.

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About Author: V.P. Laul

Author is retired Director GSI and has significantly contributed to mineral discoveries during mapping in Jaisalmer (1974-82). His Geological maps have invariably served as base maps for mineral investigations . In case of Khuiala limestone his contributions include mapping of Khuiala Formation in Sam area and mapping with AK Sen (1978-79), random limestone sampling with Virendra Kumar in Khuiala area (1977-78) and limestone investigation with N.K. Sahiwala (1978-79). He has published first paper exclusively on prospects of industrial grade Limestone in Khuiala Formation in Indian Minerals.

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Field work experience in Guyana (South America) for Gold – A travelogue - Dr. Vivek Laul

It was a very interesting field work and journey on my recent stay in Guyana (South America). On 4th September 2021, myself and my client started in morning from capital Georgetown to a small town called parika situated near Essequibo river It was a one hour drive and then from parika we sat on boat with other co passengers. It was a very interesting one and half hour drive with boat

in full speed, enjoying the natural scenery of South America. After one & half hour we reached a town called Bartica. My client arranged a vehicle there and his camp staff also reached in bartica. Then I thought now we will drive to camp by vehicle. He said no we again have to cross a small stretch of river by pontoon. Again we drove near Cuyuni river point in Bartica and by pontoon boat we crossed

along with vehicle to other end. It was a thirty minutes drive in pontoon boat . It was another interesting experience. After reaching to other end we reached to small village called Itaballi From there it was a one hour drive in vehicle we reached to field camp made up of wood situated in there lease area (Figure1). After reaching there I thought the same vehicle will be used for field work, to my surprise after

→ taking out luggage and camp, food items purchased from bartica , vehicle was released. I asked my client whether this vehicle was not supposed to be used in field. He said no you will do field work by ATV (All ter-rane vehicle) and interiors you have to cover by walk by parking ATV near the location .

Our manager and field assistants will along with you. I had never done field work on ATV or heard of ATV. ATV is having three big tyres with high grip, one in front and two in back. Manager of operations, Jai himself was driving ATV , I use to sit in back seat and two field assistants (Saba & his friend) used to sit on side seat made up of wood (Figure 2).

On 5th September first day in field I was bit

afraid to carry out field work in ATV, I said that to my client that It is better to do field work by foot from camp itself, he said that no you use ATV and they will take to you to different locations and then walk and take your observations as well as sample. The area was covered by Amazon rainforests all around. Mud roads were present in between rainfor-ests. Then I sat on ATV with doubts in my mind but to my surprise, this vehicle could easily travel through field mud roads, even through dense bushes very easily .On the first day of field work we observed gold nugget from quartz at a location in the field area (Figure 3).

After reaching to certain location which they were knowing already, we use to walk inside

the bushes, small streams to observe outcrops, floats and I use to write my observations, photograph and take sample if I found it necessary to take. In this way I carried out field work upto 13th September 2021 . I was given a small part of the lease area to do field work as target area. Daily we use to work upto lunch time and come back to camp with samples, observations . After lunch we use to crush & pan selected quartz as well as soil samples with the help of field assistants. Myself and my client could observe few gold grains after panning On the day we were returning to town four wheeler was called for carrying my client, myself, sample bags and other stuff. Return journey again was also interesting journey.

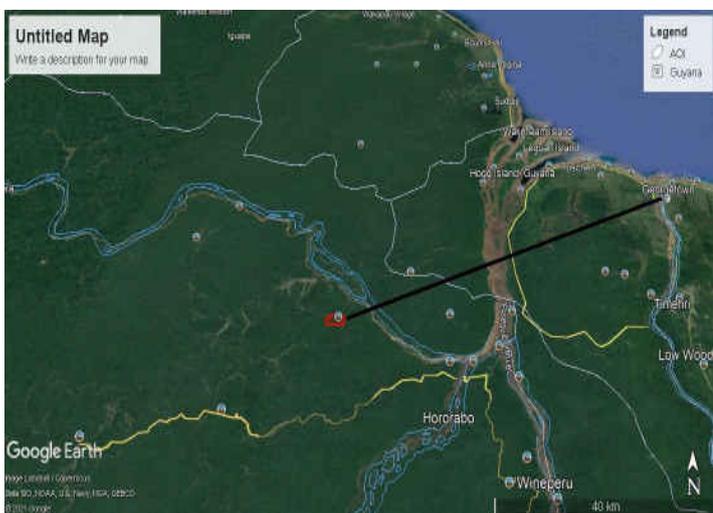


Figure 1: Google image showing study area in relation to Georgetown



Figure 2 : All Terrane vehicle (ATV)



Figure 3 : Gold Nugget observed during field work



About Author: Dr. Vivek Laul

An exploration geologist with 22 years of experience in mineral industry for evaluation of minerals assets at early exploration stages and during developmental stages. Rich exploration project management experience, both client and consultancy background, working experience in mining projects internationally and understanding of project economics.

Workshop on Enhancing Mineral Exploration Through National Mineral Exploration Trust (NMET)

Ministry of Mines, in collaboration with Geological Survey of India (GSI) and Mineral Exploration Corporation Ltd (MECL) has organized a workshop in Bhubaneswar today on mineral exploration initiatives of the National Mineral Exploration Trust (NMET) for the benefit of State Departments Mining & Geology and State Mineral Development Corporations of the States of Bihar, Jharkhand, West Bengal and Odisha.

This was the fourth workshop of NMET on the subject "Enhancing Exploration through NMET" after similar workshops were held in Jaipur for Rajasthan and Gujarat, in Lucknow covering Himachal Pradesh, J&K, Ladakh, Uttarakhand and Uttar Pradesh and in Bhopal covering Madhya Pradesh, Chhattisgarh and Maharashtra.

The workshop has provided a knowledge-sharing platform which is one of the objectives and it highlighted the role of State Directorates of Mining and Geology and Mining Corporations in enhancing exploration in the country through NMET funding. The States were requested to plan exploration activities in such a way to create considerable

impact in the mineral sector. The States were further requested to utilize the services of Notified Exploration Agencies for the untapped mineral resources and the Ministry of Mines will extend all possible cooperation to State Governments.

NMET highlighted that despite India is endowed with rich mineral resources we are importing the same in huge quantities. The mineral requirement of the country is expected to increase with increase in the share of manufacturing sector. In order to meet the increased demand and to keep the import bill down, there is an urgent need to increase exploration activities, for which there is no scarcity of funds.

Detailed presentations on NMET covering mineral exploration project formulation, approval and execution mechanism through NMET funding were made in the workshop. GSI made a presentation on potential areas for mineral exploration in Bihar, Jharkhand, West Bengal and Odisha.

It was brought out that National Mineral Exploration Trust (NMET) has provided a huge

opportunity to the State Governments to harness their mineral resources by undertaking exploration activities through Notified Exploration Agencies (NEA's) and utilizing the NMET fund available for this purpose. State DGM's and states PSU's were requested to actively participate in exploration activities and submit exploration proposals for NMET funding. The workshop served as an idea sharing platform to enhance mineral exploration which is fundamental for the growth of the mining sector.

Deoranj Kumar Singh, Principal Secretary, Steel and Mines Department, Govt. of Odisha and U. C. Joshi Joint Secretary, Ministry of Mines presided over the workshop. Dr. Ranjit Rath, CMD, Mineral Exploration Corporation Limited, Shri. Amit Saran, Director, Ministry of Mines, Govt. of India and Shri. Jaya Lal, HOD, Eastern Region, GSI, Shri. Jannardha Prasad, ADG & Chairman, TCC, NMET along with other officials from the Ministry of Mines, Geological Survey of India, MECL and CMPDIL were present during the workshop.

Source: orissadiary.com

Need for increase in mineral exploration activities in eastern States, says Centre

The Ministry of Mines will extend all possible cooperation to State governments in this endeavour.

The Centre has urged Odisha and its neighbouring States to explore untapped mineral resources in order to cater to rising demand and reduce import bills.

The mines departments and State PSUs have also been advised to actively participate in exploration activities and submit proposals for funding, an official release said.

The Geological Survey of India (GSI) made a presentation on potential areas for mineral exploration in Odisha, West Bengal and Bihar and Jharkhand at a workshop in Bhubaneswar on Thursday, it said.

The event was organised by the Ministry of Mines in collaboration with the GSI and the Mineral Exploration Corporation Ltd (MECL).

"To meet the growing demand and to keep the import bill down, there is a need to increase exploration activities," the release said.

The Ministry of Mines will extend all possible cooperation to State governments in this endeavour, it added.

Detailed presentations on project formulation, approval and execution mechanism through the National Mineral Exploration Trust were also made at the workshop.

Source: [The Hindu](http://TheHindu)

Odisha to offer five more mines for auction

With 11 mineral blocks under hammer, the State government is all set to offer five more new mines for auction in the next two months.

With 11 mineral blocks under hammer, the State government is all set to offer five more new mines for auction in the next two months. Minister of Steel and Mines Prafulla Mallick informed this to Union Minister of Coal and Mines Pralhad Joshi during a function organised by the Ministry of Mines in New Delhi through virtual mode on Wednesday.

Addressing the function organised for handing over 100 G-4 mineral blocks reports of

Geological Survey of India (GSI) to different state governments, Mallick said, "We have created a separate organisation called Odisha Mineral Exploration Corporation (OMEC) to expedite the process of the exploration in the State."

After receiving G-4 exploration reports of seven mineral blocks, Mallick said, "We expect more G-4 and G-3 exploration reports of mines in future which would help the State speed up e-auction of its mineral wealth." He further informed that Odisha has completed auction of 34 mines including 24 blocks whose leases expired by March 31, 2020. While the consent to operate has been given to 19 blocks,

five blocks surrendered their leases as they failed to comply with the Mineral Auction Rule, 2015.

With the approval of the Centre, two of the five blocks are being operated by the Odisha Mining Corporation and the remaining three blocks are already under auction process. Mallick said Ghoraburhani - Sagasahi iron ore block located in Koira tehsil of Sundargarh district is the first block to be auctioned in India under the Mineral Auction Rule, 2015 and Essar Steel India Limited was the preferred bidder.

Source: The Indian Express

SWASTHA

A GEMCOKATI EMPLOYEES INITIATIVE

Becoming the Most Wonderful Version of Yourself

We are all a deep part of rich culture in which we live—whether it’s a workplace, a family, a community, or a religion where we are taught and learn beliefs, thoughts and ideas that may or may not be life-supporting or beneficial for us but eventually start viewing the world through a lens that is greatly influenced by them.

Everyone is striving to be successful, as a parent, a professional, or anything we have to do as a part of the ecosystem. But one thing we don't think about is how to be *wonderful*.

Once a teacher asked her students, “What are the qualities of the most wonderful person you know?” The answers she received were *loving*, *caring*, and *pleasant*. She then asked, “Would you say that this person has had a ‘successful’ impact or influence on your life?” There was a great silence. They had never even considered this definition of *success* before.

We all have encountered many times in our lives, the wonderful people, the generous, kind, and compassionate ones, who actually, always go the extra mile. They are the ones who are there when we have fallen, they always loved us when we don't love ourselves, they always cared for us when no one else did, they always showed a depth of empathy that inspired us to be better people, they always exhibited immense wisdom and peace, they showered with us a kindness we don't find elsewhere. So It's obviously the wonderful people who are the most successful and impactful influences on all our lives, and we are blessed to encounter them.

Scientific research shows us that we only gain momentary bursts of joy and happiness from all the pleasures we seek in life, from money to anything that money can buy. The everlasting satisfaction and fulfillment we desire comes only from living a life of purpose, meaning, compassion, and altruism. It always comes from being there for others, who are in need, loving one another despite the uniqueness and differences, but making sure of bringing just smile. We are obliged to follow ambitions, dreams, and professional goals so that we can make this world a more better place before leaving forever. This is actually what brings ultimate satisfaction, meaning and deepest happiness to our lives. Ending with the words of a great philosopher—that a life well-lived is a life in which you have shared an abundance of love, and that the greatest aspiration to have is to be a wonderful person for someone else.

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Dr. Majo Joseph is an Ayurveda Consultant, & General Practitioner. He is also a Psychology And Counselling, Wellness Trainer.

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