

Re-Energising Sustainable Mining in India

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Executive Summary

This monograph documents the range of issues being faced by the mining sector in India, especially the non-coal sector. It finds that policy, being promulgated through Acts and Ordinances, is recognizing the special needs of the sector, but implementation is another matter. The net result is that mining growth and exploration activity are spiralling down, approvals are stuck and what is worse, increasingly even critical data are not being shared by the government. The paper identifies 5 key issues (a) deficient private sector participation in exploration, (b) lack of investor confidence due to insensitive judicial decision-making, (c) lack of clarity on ever changing environment guidelines, (d) weakness in state-level steps that precede auctions and the most important of all (e) bureaucratic freeze due to fear of vigilance or accusations. For each of these issues the paper identifies possible solutions that do not require any more legal changes, simply a transparent method of governance for this sector.

Section 1 – The Place of Mineral Exploration in India’s Rapid Growth

Mining is vital for the country’s economy; not just for current economic growth but an efficient mining sector is a critical component for long term sustainable growth. This policy note examines the pivotal role played by exploration activity and subsequently mineral production in India’s growth trajectory. So far, the potential in the mining sector has been severely underutilised. Be it fuel from coal or the value chain of minerals to metals to materials, output from the mining sector, forms a critical part of India’s growth story. The mining and quarrying sector is widely acknowledged as a key sector for manufacturing, power, construction, *“Mining sector can play a significant role in providing raw material security for the country. Not only steel and aluminium, but also energy critical metals and technology metals like Germanium, Gallium, Osmium, Indium, Selenium, Cobalt, Niobium, Beryllium, Tantalum, Wolfram, Bismuth, etc. and rare earth metals, which have a wide application in electronics industry are emerging as critical inputs.”*¹

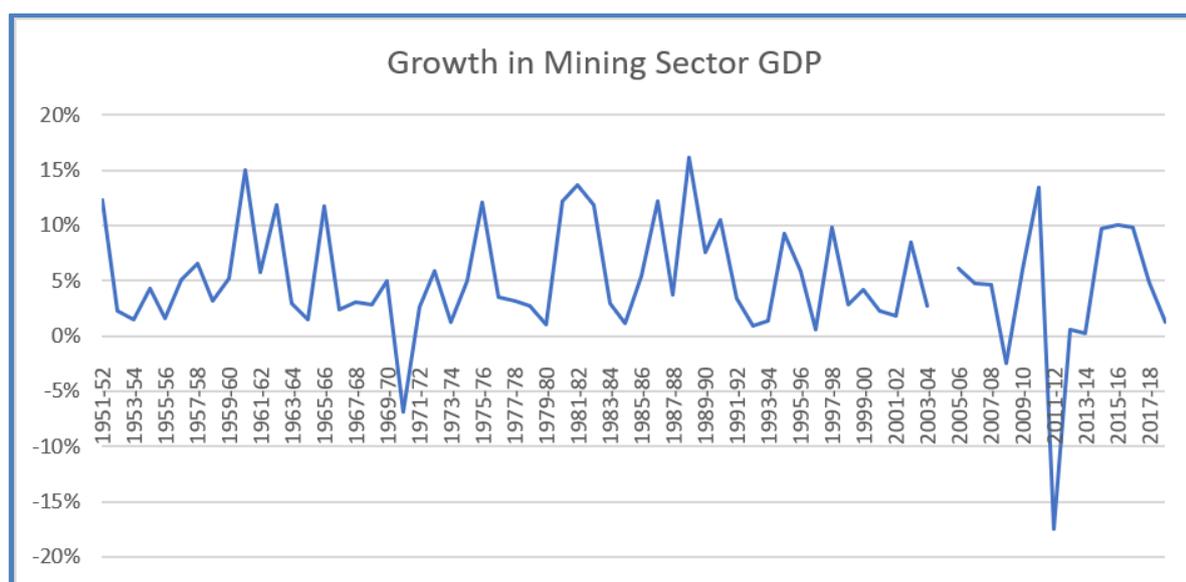
Preceding any commercially feasible extraction and processing of minerals is the exploration stage. If the ecosystem for exploration is well developed, many of the later stages are well taken care of. However, any weaknesses in the first stage have large trickle-down effects in later stages and also increase the riskiness of a project. Mineral exploration calls for high investment, which is inherently high risk as returns, if any, accrue only in the long term. The fact that out of 100 areas under exploration, barely one or two make it to the stage of mining underscores the need for strong and appropriate environment for exploration. Moreover, exploration without requisite incentives dampens the drive to discover. Exploration essentially requires adaptive thinking, whereas regimented procedures like an assembly line job, are only likely to produce mundane results. Government policy and regulation therefore need to ensure that competitive spirits exist from the exploration stage; if that is not possible then appropriate regulation can create the right incentives. The responsibility of the government therefore is to ensure that a good environment exists for free and fair competition that attracts private interest and investment in mineral exploration.

¹ Planning Commission, 2012, http://megplanning.gov.in/draft-approach_12plan.pdf

Current Status of Mining in India

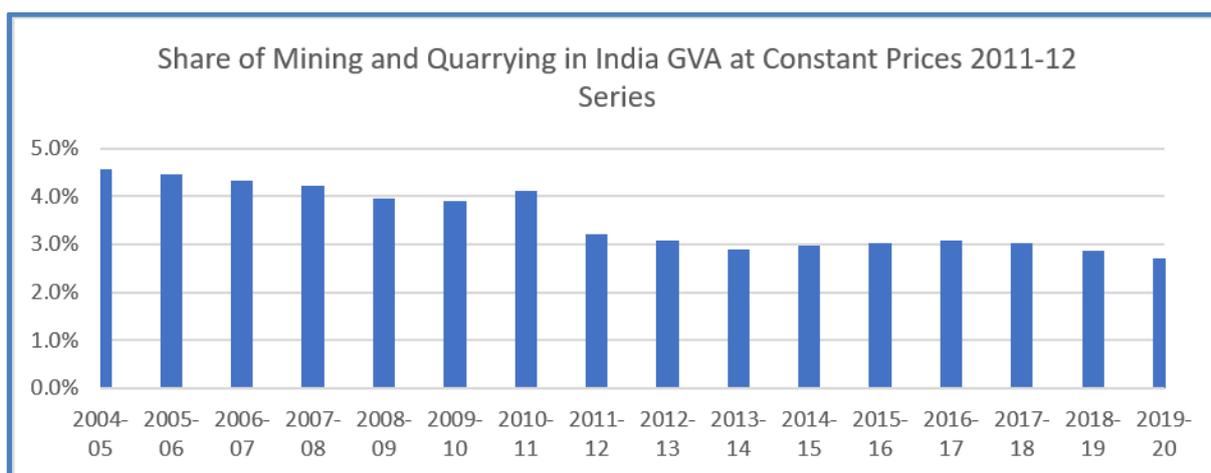
India's total land area is 3.2 million sq. km, of which the identified Obvious Geological Potential (OGP) area for minerals is 0.57 million sq. km, amounting to 18 percent of the total land area. Till now, most of the exploration in the country has been near the surface (50–100 m) with little or no information on deep-seated or concealed or rare earth minerals. Data from the Ministry of Mines reveals that 100% of the OGP has been mapped in the case of surface minerals and only 22% has been mapped for deep-seated minerals till March 2018. Countries with similar geology as India have almost 95 percent area fully mapped. Thus, India's mining potential, stands hugely under-utilised.

According to national income statistics, the Mining and Quarrying sector has four components - fuel mineral, metallic mineral, non-metallic mineral and minor minerals. As far as the contribution to growth is concerned, on an average, India's mining sector has accounted for 3.5% of the national Gross Value Added over the period 2004-05 to 2019-20. However, the contribution to national output has been declining in recent years, as the mining sector has grown at a slower pace than other sectors. Though growth has been volatile on a year on year basis, the sector has barely grown at an average annual rate of 2.9% over the period.

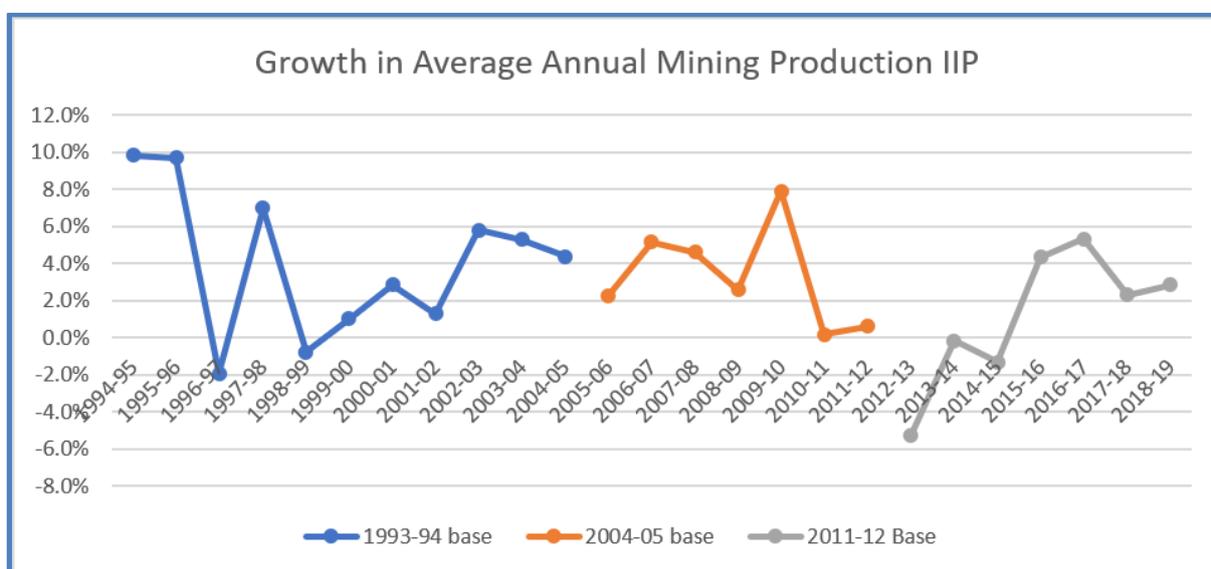


Source: Author estimates from CSO data

Note: Data till 2003-04 is based on 2004-05 series, from 2005-06 is based on 2011-12 series. The GVA series are not strictly comparable and hence only present an indicative picture across time.



Source: Author estimates from CSO data



Source: Author estimates from CSO data

Note: The three IIP series are not strictly comparable and hence only provide an indicative picture across time

Even though mining has been recognised as a sector with high employment potential, employment in Mining and Quarrying from RBI KLEMS data base shows a fall from 0.26 crores in 2004 to 0.20 crores in 2017, the share of employment in total employment in India fell from 0.63% to 0.44%². There is a caveat here that, official data may not have captured the full extent of employment in mining in its unorganised segment, given considerable evidence of rampant illegal mining across the country. It is true that illegal mining with poor work

² Source: Bhandari and Dubey, Emerging Employment Patterns in 21st Century India, Indicus 2019

conditions and causing massive environment degradation receives a boost when legal production is inadequate or regulatory procedures and approvals are arduous. The question therefore to answer is whether the potential of the mining sector for organised employment is being constrained over the past decade due to poor policy.

This policy note focuses on the production and exploration of ‘major’ minerals, excluding atomic minerals, minor minerals, coal & hydrocarbons³. Major Mineral production in India stood estimated at Rs 71,906 crores in 2018-19, and the top five minerals by production which accounted for about 90% of the total production in value terms were:

- (i) Iron ore Rs.45,200 crore
- (ii) Limestone Rs.8,480 crore
- (iii) Zinc Rs. 5,608 crore
- (iv) Chromite Rs. 3,584 crore
- (v) Manganese Rs.2,232 crore.

MINERAL PRODUCTION (OTHER THAN ATOMIC, FUEL & MINOR MINERALS)									
Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Quantity (mill. tonnes)	474	455	448	465	452	497	540	570	600
Value (in Rs crore)	52,161	52,278	49,175	48,591	44,501	40,163	47,432	58,535	70,024

Source: Ministry of Mines, Government of India

Even as the country is self-sufficient in reserves for many minerals like bauxite, chromite, limestone, iron ore, kyanite etc., in many specific instances, India needs to import certain types/quality of minerals and ferro-alloys etc. to meet domestic manufacturing requirements. There is a significant import dependency of around 95% for copper ore/concentrate and 50% for manganese ore. India is the world’s fourth largest producer of iron ore, and has moved

³ While coal accounts for the highest weight - 65% - in the Gross Value Added within the Mining sector, it is regulated by the Ministry of Coal, and merits an exclusive policy note.

into the second place globally for steel production in 2018. Yet India is a net importer of iron and steel, with the strong domestic demand from manufacturing and infrastructure projects. The Federation of Indian Mineral Industries has put the onus on the government for the poor record in meeting domestic demand as mineral imports have been valued at thrice the domestic production since 2013-14.⁴ India's vast mineral reserves need to be harnessed to offset the trade balance in our favour.

There are three main challenges for increasing domestic production and employment in mining that will be detailed in the following sections:

- 1. Inadequate budgets and institutional capacity have led to meagre mineral exploration**
- 2. Change in the policy regime for mining leases and prospecting licenses since 2015 mandating e-auctions has been marred by delays in approvals and lack of clarity for private investors.**
- 3. The disinterest of bureaucracy in giving permissions for stated fear of vigilance enquiries and general environment of accusations has led to stagnation in the number of licenses approved.**

Later sections address these issues. The next section focuses on the importance of ramping new investments in mining sector for the alternative is (a) a high cost economy, (b) greater dependence upon global partners for critical mineral needs, impacting national security and (c) greater dependence on older technologies which leads to relatively poorer environmental impact.

Section 2 – Need for New Investment in Mining from a Sustainability Perspective

It is well known that mining for a sustainable planet requires new investment using latest techniques. In the absence of appropriate practices and technologies, the country faces losses

⁴ Business Standard, June 23, 2018 https://www.business-standard.com/article/economy-policy/mineral-rich-india-still-imports-thrice-the-value-of-its-local-production-118062200930_1.html

in revenue, environment, employment and foreign exchange. What is more, unsustainable practices promote a high cost economy that adversely affects India's manufacturing capabilities.

In 2012, India was signatory to the United Nations Resolution 66/288, "*The future we want*", which renewed the global commitment to sustainable development, ensuring an economically, socially and environmentally sustainable future for present and future generations. What is important to note is that paras 227 and 228 acknowledged the crucial role played by the mining and called for strong and effective legal, regulatory frameworks, policies and practices for sustainable mining (See Box). It is worthwhile to note here that extraction of minerals takes a toll on the forest resources of the country - the average forest cover of the 50 major mineral producing districts in India stands at 28%. The total forest cover in these districts, 1,18,90,400 hectares is about 18% of the country's forest cover⁵. These regions are also home to socially vulnerable tribal communities, who are rarely taken into confidence in the mining plans⁶.

Box: UN General Assembly Resolution, 2012

Mining

227. We acknowledge that minerals and metals make a major contribution to the world economy and modern societies. We note that mining industries are important to all countries with mineral resources, in particular developing countries. We also note that mining offers the opportunity to catalyse broad-based economic development, reduce poverty and assist countries in meeting internationally agreed development goals, including the Millennium Development Goals, when managed effectively and properly. We acknowledge that countries have the sovereign right to develop their mineral resources according to their national priorities and a responsibility regarding the exploitation of resources, as described in the Rio Principles. We further acknowledge that mining activities should maximize social and economic benefits, as well as effectively address negative environmental and social impacts. In this regard, we recognize that governments need strong capacities to develop, manage and regulate their mining industries, in the interest of sustainable development.

228. We recognize the importance of strong and effective legal and regulatory frameworks, policies and practices for the mining sector that deliver economic and social benefits and include effective safeguards that reduce social and environmental impacts, as well as conserve biodiversity and ecosystems, including during postmining closure. We call upon governments and businesses to

⁵ CSE, 2010 <https://www.cseindia.org/sharing-the-wealth-of-minerals-policies-practices-and-implications-2484>

⁶ <https://qz.com/india/1729021/an-adani-coal-mine-threatens-a-sacred-forest-grove-in-india/>

promote the continuous improvement of accountability and transparency, as well as the effectiveness of the relevant existing mechanisms to prevent illicit financial flows from mining activities.

Source: United Nations, 2012, Resolution adopted by the General Assembly on 27 July 2012 66/288. The future we want https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/66/288&Lang=E

The principles of sustainability apply at all six stages of a mine life cycle – initial exploration, mine plan, construction, actual mineral extraction, closure of the mine and finally, reclamation and rehabilitation. Intra and inter-generational equity, the precautionary principle, scientific mining, management of environmental and socio-economic impacts, creation of substitute capital in the form of social and physical infrastructure and stakeholder engagement are principles that sustainable mining practices must accommodate.

Globally, under regulatory and market pressure, mining companies have increasingly become environmentally sensitive. The realisation that commercial viability crucially rests now on being environmentally and socially responsible has been one of the most important forces behind this. A case in point⁷ is Minera Media Luna in Mexico which used a rope conveyer to transport ore down the mountain, instead of the traditional practice of trucking down a steep slope. The impact was not only a reduction in the use of diesel, but also a significant improvement in operational safety. The mine saw a pay-back of the initial investment through lower operational costs, with an additional cost benefit of the plant being powered by the energy generated from the friction of the cable. Innovative techniques therefore made for environment friendly mining and the financial viability of the firm. This is just one illustration from the global industry, examples in India are fewer, primarily because policy issues have not enabled the growth of the mining sector in a wholesome and healthy manner.

Good governance and self-regulation are of course key to ensuring that the policies and rules in place are adhered to, that incentives move away from short-term over-extraction, and that innovative techniques are adopted towards sustainable mining. The government has implemented the Sustainable Development Framework (SDF) in the Indian mining sector, that

⁷ <https://www.miningglobal.com/sustainability/sustainability-strategies-mining>

prescribes detailed mining standards (specifically with regards to scientific and environmentally friendly mining, addressing social impacts of mining, adoption of scientific means of mine reclamation and closure etc.) by mining companies. Delineating eight phases in a mining project – site exploration; development (construction of access roads, site preparation and clearing); active mining (open cast mining, placer mining, underground mining, reworking of inactive or abandoned mines and tailings); disposal of overburden and waste rock; ore extraction and transportation; beneficiation (including milling); tailings disposal; and site reclamation and closure, the environment footprint at each stage has been mapped.

In line with the SDF, the Ministry of Mines initiated the Star Rating⁸ system, according to which all mine lease holders would get a rating of one to five stars based on the performance on the parameters laid down under the SDF. The template for ‘Star Rating’ is comprehensive and includes parameters at all stages. For instance, use of software for exploration/exploitation modelling, ore body modelling, optimum pit design and production scheduling; removal of waste, zero waste management; safeguard against subsidence, ventilation, as per DGMS prescribed norms, geo-technical monitoring of roof/ stability of pillars; top soil utilisation/stacking; construction of check dams, garland drains, retaining walls etc.; ground water monitoring, water usage, air pollution, noise pollution,; use of green energy; backfilling of site, landscaping, plantation etc.

There are several examples of good practices in mining cited on the IBM⁹ website e.g. Bharti Cement¹⁰ has been highlighted for instilling wet drilling by inbuilt water injection system, proper maintenance of haul roads and service roads, closed AC cabins for operators of all HEMM, dust masks provided for the mine workers etc. Vedanta Mines¹¹ has been cited for its exemplary environment protection through afforestation, mine site reclamation, community

⁸ <https://mitra.ibm.gov.in/Pages/Star-Rating.aspx>

⁹ <http://ibm.gov.in/index.php?c=pages&m=index&id=394&mid=23899>

¹⁰ <http://ibm.gov.in/writereaddata/files/08202014164506Bharti%20Cements-Hyderabad%20Region.pdf>

¹¹ <http://ibm.gov.in/writereaddata/files/11042015102956Vedanta%20Limited%20Mining%20&%20Environment.pdf>

upliftment etc. JK Cements¹² has been cited for social activities such as provision of drinking water, medical camps etc.

Given all such efforts at delineating best practices, or putting together a fairly elaborate SDF, it may be expected that there will be few hurdles between investor interest and eventual mineral production. That, however, is not the case. Despite all the exemplary examples, **weak or unfair enforcement contributes to a failure of efficient implementation of the rules in several cases**, making for severe environmental degradation and public resistance from local communities who are not consulted in the plans^{13, 14}

The effectiveness of regulation and policy is critical in a country like India, where, more often than not, rules are breached, particularly by small mines/quarries. While some of the larger mining companies have pressure from rising corporate governance standards to stay within the rules, many of the smaller ones do not even have that. When internal controls within the corporate sector are weak, the quality of regulation and enforcement needs to be extremely high. That is, while monitoring and enforcement are critical, heavy handed regulation can completely stop a productive, income and employment generating economic activity.

Unfortunately, the fallout of the violations of law have led to blanket bans by the judiciary¹⁵, creating rupture in production and uncertainty for miners across the country. For a sector where sustainability demands careful and cautious extraction over the long term, such legal sanction disrupts the interest in investment and the introduction of new technologies in production and for environment sustainability.

Section 3 – Evolution, Current Status and Role of Policy in Mining

Government policy has been evolving in India especially in the recent past (see timeline in Appendix 1), the use of auctions to allocate licenses has been an important element.

¹² <http://ibm.gov.in/writereaddata/files/11042015101445Halki%20J%20K%20Cement%20Ltd%20Muddapur.pdf>

¹³ <https://www.downtoearth.org.in/blog/mining/can-mining-be-sustainable--57683>

¹⁴ <https://www.thebetterindia.com/212493/tata-steel-india-tribe-conclave-samvaad-jamshedpur-jharkhand/>

¹⁵ <https://www.downtoearth.org.in/news/mining/sc-cancels-mining-in-iron-ore-leases-in-go-a-sets-aside-hc-order-which-allowed-renewal-of-mining-licenses-59648>

However, while the introduction of auctions has dramatically changed the sector, it is also evident that there has been a conscious policy decision to retain some out-of-auction elements, including those for protecting the preferential right of the existing explorations title holders (Prospecting Licence) for obtaining the Mining Lease (ML) based on their exploration.

The link between exploration, prospecting and commercial feasibility therefore is very intimate and non-auctioning mechanisms have been retained precisely for this reason.

The potential for auctions: This has been somewhat curtailed as estimation/exploration have been in the ambit of government organizations that lack the capacity, technology and funds to work in a timely and sufficient method. Moreover, as mentioned earlier exploration essentially requires adaptive thinking, whereas regimented procedures mandated by government agencies like Geological Survey of India, State Directorates, and PSUs, is less likely to result in accurate reserve estimation. Other factors like land acquisition/forest clearances etc. add to the delays in operationalisation of a mine post-auction. Globally policies in mining also allow for non-auction routes and that is for similar reasons as those that operate in India.

Section 10A(2)(b): When auction was instituted by the MMDR Amendment, 2015, all existing applications for grant on first cum first serve basis were made ineligible. However, the applications where exploration had been undertaken already under a valid mineral concession, were saved and had been extended the preferential right for obtaining Prospecting Licence (PL) or Mining Lease (ML). The section 10A(2)(b) was specifically inserted into the MMDR Act, to compulsorily protect the entitlement for the grant of mining leases, and for utilising the exploration already done by these existing exploration permit holders. Yet, the system does not appear to be working.

What could be the reason for this inaction despite a facilitative legal framework already in place? In the next section, we lay out the landscape of mining regulation as we investigate the answer to this crucial question.

Regulation of Mineral Development in India: At the outset, it must be kept in mind that mining regulation is a matter for the Central and State governments. India is a federal union of 35 States/Union Territories and under the Constitution of India, the subject of mineral development and regulation is allocated to State governments, subject to the laws passed by the Parliament. Management of mineral resources is the responsibility of both the Central and State Governments in terms of entry 54 of the Union List (List I) and entry 23 of the State List (List II) of the Seventh Schedule of the Constitution of India. The role of the Union Government is limited by the boundaries set by such laws, that is the MMDR Act, 1957, which has been amended over the years. As mandated by the MMDR Act, 1957, the Union Government has framed rules for regulating the grant of all minerals other than atomic and minor minerals. The State Governments have framed the rules for minor minerals. The Ministry of Mines, Government of India, administers the MMDR Act, 1957, in India.

**NATIONAL MINERAL POLICY, 2019
(For non-fuel and non-coal minerals)**

1. VISION

Minerals are a valuable natural resource being the vital raw material for the core sectors of the economy. Exploration, extraction and management of minerals have to be guided by national goals and perspectives, to be integrated into the overall strategy of the country's economic development. Endeavour shall be to promote domestic industry, reduce import dependency, and feed into Make in India initiative.

Natural resources, including minerals, are a shared inheritance where the State is a trustee on behalf of the people and therefore it is imperative that allocation of mineral resources is done in a fair and transparent manner to ensure equitable distribution of mineral wealth to sub-serve the common good. Mining needs to be carried out in an environmentally sustainable manner keeping stakeholders' participation, and devolution of benefits to the mining affected persons with the overall objective of maintaining high level of trust between all stakeholders.

It shall also be ensured that the regulatory environment is conducive to ease of doing business with simpler, transparent and time-bound procedures for obtaining clearances. Since mining contributes significantly to state revenues, there is a need for an efficient regulatory mechanism with high penetration of e-governance systems to prevent illegal mining and value leakages. Mining contributes significantly to employment generation, thus, there shall be a keen focus on gender sensitivity in the mining sector at all levels. Endeavour shall be made to set up a unified authority at national level for mineral development and co-ordination to fulfill objectives of this policy.

Source: <https://mines.gov.in/writereaddata/Content/NMP12032019.pdf>

Under the Mines & Minerals (Development & Regulation) Act, 1957 and the Mineral Concession Rules, 1960, the State Governments accord grant/renewal of reconnaissance

permits, prospecting licences and mining leases. Also, the State Governments are required to submit a copy of every permit/licence/lease granted/ renewed to the Controller General, IBM, under Rule 57 (1) of Mineral Concession Rules, 1960. Additionally, the State Governments also have to submit a consolidated Annual Return of all reconnaissance permits, prospecting licences and mining leases granted or renewed to the Controller General, IBM, in a prescribed format not later than 30th day of June of each year, for the previous financial year. **However, for the last two years, there appears to be no information received from the State Governments on reconnaissance permits and prospecting licences– a curious ‘lapse’.** **This by itself is a serious problem because lack of data prevents more definitive analysis.** **But what data are available show that overall conditions are quite worrisome. On the other hand, if there actually has been no grant of these mineral concessions in the last two years, the scenario is even more grave, which will have an obvious long term impact of constricting the mining sector of the country.**

Section 3 (c) of the Mines & Minerals (Development & Regulation) Act 1957 defines “Mining Lease” (ML) as a lease granted for the purpose of undertaking mining operations and includes a sub-lease granted for such purpose. The Act defines “mining operations” as any operations undertaken for the purpose of winning any mineral. The MMDR Act 1957 was amended a number of times over the years, to accommodate the changing economy, with the most recent amendment in 2015 changing the rules of the game completely. The MMDR Act was amended in 2015 with the main objective of increasing transparency, removing discretion and improving ease of doing business. Accordingly, e-auctions were mandated for the grant of mineral concessions. In addition, the tenure of leases was extended from 30 to 50 years, the District Mineral Fund was set up to ensure the district benefits from the mining operations, and the National Mineral Exploration trust was set up to effectively coordinate funds for exploration.

The number of mining leases approved by the government increased particularly over the period 2007-2012, and has fallen drastically since 2014-15 with the change in policy regime of transferring 27 mineral to minor minerals. Of the 3834 mining leases in India as of 31st March 2018, the top three states are Odisha (18.77%), Karnataka (12.23%) and Madhya

Pradesh (11.74%). The top three minerals are Limestone (2046 leases), Iron Ore (488 leases) and Bauxite (387).

Mining Leases for Minerals (excluding Atomic Minerals, Coal, Lignite, Petroleum and Natural Gas and Minor Minerals)		
<i>Year-ending</i>	<i>Number of Mining Leases</i>	<i>Area in hectares</i>
31.3.2000	8996	655018
31.3.2001	9330	658743
31.3.2002	8872	624125
31.3.2003	9131	620372
31.3.2004	6941	453624
31.3.2005	7527	
31.3.2006	7610	459714
31.3.2007	7734	
31.3.2008	8784	480003
31.3.2009	9415	491446
31.3.2010	10488	507404
31.3.2011	11003	547814
31.3.2012	11456	530282
31.3.2013	11104	498249
31.3.2014	10982	454706
31.3.2015	3868	339972
31.3.2016	4128	354909
31.3.2017	4382	366010
31.3.2018	3834	325876
Source: The Bulletin of Mining Leases and Prospecting Licences, IBM Two years' data volumes are missing from the website		

Looking at the data on exploration, as per the GSI (2018) Report “Mineral Exploration in India at a Glance”, exploration in India can be divided into four time phases – Pre-independence: 1857 to 1947, Exploration under GSI : 1947-1999; UNFC-1997 guided rules for the period 1999 to 2015 and finally post-2015 under the Government of India’s notification on Mineral (Evidence of Minerals and Content) Rules, 2015 which brought in auctioning of mineral blocks for mineral exploration in the country. However, even today, the fact is that expenditure on exploration is woefully inadequate, **“On every square km, the country's exploration spend is a measly \$9 as against \$5580 in Australia and \$5310 in Canada”**.¹⁶

When it comes to the legal and regulatory framework in respect of mineral exploration, the main statute is the Mines and Minerals (Development and Regulation) Act, 1957. Initially this statute provided only for prospecting and mining operations, to be undertaken separately by a prospecting license and a mining lease respectively. With the liberalisation underway in the nineties, the National Mineral Policy 1993¹⁷ stressed the need for encouraging and enabling private investment and state of the art technology, including attracting FDI into this sector. In lines with these principles, the government introduced the Reconnaissance Permit as a new form of mineral concession through an Amendment in 1999 - defined as “an operation undertaken for preliminary prospecting of a mineral through regional, aerial, geophysical, or geo-chemical surveys and geological mapping. However, it excludes pitting, trenching, drilling (except drilling of borewells on a grid as specified from time to time by the Central Government) or sub-surface excavation.” The GSI Report for 2018 states that since the introduction of the Reconnaissance Permit, 401 licenses were granted for various commodities to private exploration agencies, out of which 70% were for diamond and gold. “It was observed that the reported RP expenditure, is less than half of the government expenditure per unit area”.

The rules were further amended in 2015, and as per Section 10 C of Mines and Minerals (Development and Regulation) Amendment Act, 2015, “Non-exclusive Reconnaissance

¹⁶ https://www.business-standard.com/article/economy-policy/mineral-rich-india-still-imports-thrice-the-value-of-its-local-production-118062200930_1.html

¹⁷ https://mines.gov.in/writereaddata/UploadFile/Policy_Legislation_more.pdf

Permits may be granted in respect of any notified minerals or non-notified minerals or a group of specified minerals, other than minerals specified in Part A or Part B of the First Schedule of the Mines and Minerals (Development and Regulation) Act 1957, subject to such terms and conditions as may be prescribed by the Central Government. The holder of such non-exclusive reconnaissance permit shall not be entitled to make any claim for the grant of any prospecting licence-cum mining lease or a mining lease. As per the Rule 3 (2) of the Mineral (Non-exclusive Reconnaissance Permits) Rules, 2015, the State Government shall establish an online system for grant of such non-exclusive reconnaissance permits. **However, official data shows that there is no information of the grant of any NERP from State Governments.**

Mining is the first revenue generating stage in the mineral life cycle, thus without its surety, no investment would be forthcoming in exploration. This is demonstrated by the fact that reportedly there have been no takers of the Non-exclusive Reconnaissance Permit (NERP), which didn't provide any security of mining concession to the explorer.

	Number of Prospecting Licenses Approved/Granted	Area in hectares
2007-08	75	35726
2008-09	21	1623
2009-10	81	21386
2010-11	131	35682
2011-12	115	19746
2012-13	104	13366
2013-14	146	24589
2014-15	168	28255
2015-16	5	2869
2016-17	"During 2016-17, no information regarding "Prospecting licence-cum-mining lease" or composite licence" having been approved/granted was received."	

2017-18	"During 2017-18, no information regarding "Prospecting licence-cum-mining lease" or composite licence" having been approved/granted was received."
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Source: The Bulletin of Mining Leases and Prospecting Licences, IBM

	Reconnaissance Permits Granted	Area in sq.km
2000-01	39	49249
2001-02	34	39838
2002-03	31	50284
2003-04	23	31456
2004-05	27	42834
2005-06	20	26367
2006-07	2007 Report not available on website	
2007-08	60	80238
2008-09	19	40052
2009-10	55	58382
2010-11	30	35913
2011-12	15	15341
2012-13	4	3304
2013-14	Nil	
2014-15	Nil	
2015-16	During the period from April-2015 to March-2016, no information regarding grant of Reconnaissance Permits/Non-exclusive reconnaissance Permits has been received.	
2016-17	During the period from April-2016 to March-2017, no information regarding grant of Reconnaissance Permits/Non-exclusive reconnaissance Permits has been received.	

2017-18

During the period from April-2017 to March-2018, no information regarding grant of Reconnaissance Permits/Non-exclusive reconnaissance Permits has been received.

Source: The Bulletin of Mining Leases and Prospecting Licences, IBM

According to FIMI cited in the media¹⁸, before the auction regime, which came into force in 2015, there were 66,477 mining applications pending with the Central and State Governments. All these applications became null and void once auction was made mandatory through the Mines and Minerals (Development and Regulation) Act 2015. **FIMI claims that between 2015 and 2019, none of the mining leases have been executed for the 42 green field mineral blocks auctioned and that mining leases have been executed in the case of only four of the 14 earlier operational category C mines of Karnataka, even though these mines came with pre-existing environmental and forest clearances.** FIMI has also pointed to the State governments holding up on procedures of approval, particularly from State Forest and Geology departments¹⁹.

Hard data are not available, but industry sources claim that only about 70 mineral block auctions have occurred in the last 5 years, exhausting the available inventory of exploration done by the exploration agencies of the Centre & State Governments. No doubt the government is increasingly feeling the pressure of enhancing exploration. The National Mineral Exploration Trust (NMET) was created in 2015, with 2% of the royalty from the mining lease holders for undertaking exploration in the country, but its immense exploration efforts have yielded little in terms of identifying mineral blocks for auction. While there could be many causes for this, it is apparent that greater emphasis on private sector exploration under well-defined environmental parameters and scientific monitoring is required for the mining sector activity to accelerate.

¹⁸ Engineering News, September 4th 2019, <https://m.engineeringnews.co.za/article/indian-mining-sector-in-chaos-fimi-2019-09-04>

¹⁹ FIMI 2018

The Central Government on 10th Jan, 2020, promulgated an Ordinance - Mineral Laws Amendment Ordinance 2020²⁰, for amendment in Coal & Non-Coal mineral Mining laws. In all likelihood the ordinance was required to prevent stoppages in mines for leases expiring as of March, 2020, such leases reportedly account for 28% of iron ore & 50 % chrome ore production. Besides the continuance of mining in the expiring leases, the Ordinance also endorses the urgent need of providing a framework for boosting mineral exploration in the country. It has extended the ambit of preferential grant of ML for the exploration activity both in coal and non-coal mineral regimes. The Ordinance provides that the holders of NREP may apply for a prospecting license-cum-mining lease or mining lease, with the caveat that this provision would apply to certain licensees as prescribed in the Ordinance.

When auction was instituted by the MMDR Amendment, 2015, all existing applications for grant on first cum first serve basis were made ineligible. However, the applications where exploration has been done under a valid mineral concession, were saved and had been extended the preferential right for obtaining PL or ML. As mentioned earlier, Section 10A(2)(b) was inserted to compulsorily protect the entitlement for grant of mining leases, for utilising the exploration already done by these existing exploration permit holders. However, clearly this legal right ingrained in the newly amended laws, did not fructify into approvals.

In other words, **the range of changes made in the Act through the Ordinance, only reveals the focus of policymakers in improving conditions for the mining sector. However, the Act falters in the face of bureaucratic implementation.** These provisions in the Act, for utilising the previous exploration for taking up mining, have not been translated into actual action. Central government departments have been averse to granting approvals for such cases. Industry sources mention (hard data not being published) **that there are several proposals covered under section 10A(2)(b), for grant of concessions, are pending in the Ministry, even for more than 5-10 years.** In all these cases a significant amount of exploration has already occurred, however despite a facilitative policy framework, approvals are not being granted.

²⁰ The Mineral Laws (Amendment) Bill, 2020 was introduced in Lok Sabha on March 2, 2020 and passed on March 6, 2020. The Bill amends the Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act) and the Coal Mines (Special Provisions) Act, 2015 (CMSP Act). The provisions will replace the Ordinance, once the bill has been passed by the Rajya Sabha and notified as an Act. <https://www.prsindia.org/billtrack/mineral-laws-amendment-bill-2020>

Our investigations reveal the following bureaucratic malaise. Most such cases are facing protracted delays in the grant of any approval. The IBM is being asked to re-look at individual cases which it had already done to find some flaw to delay; the clear-cut recommendations of the State level committee of DGM, IBM & GSI, are also being ignored; and many proposals are also languishing at the State Levels, which have been informally blocked by the Centre to come for seeking prior approval.

Why would the government make policy, but not follow it up with action? Why would the authorities delay investment in a low growth sector? Why would the state not want greater investment and employment generation when all other issues have been taken care of? Why is a system of high cost inputs for industry, illegal mining, environmental destruction preferred over scientific mining, low cost, high growth, and quality employment?

The answer lies in the divergence between public benefits and private risks to the bureaucracy. While the benefits will accrue to a larger group of people, decision-making is fraught with risks for the concerned bureaucrat. And therefore, the bureaucracy is unwilling to sign off on individual approvals for fear of later accusation and investigations by agencies. Rather than take ownership over growth and face the individual risk, members of the bureaucracy therefore appear to be simply delaying.

Section 4 – The Underlying Problems and Solutions

The analysis so far has led to the conclusion that the fear of being accused of corruption, given the long history of being called out by the Courts, and the cited alibi of vigilance enquiries have led to a freeze in the approval granting process. If policy recognizes the critical need for mining and also that the off-auction route is legal, it is also the responsibility of the government to ensure that approvals are not held up. Specific solutions are needed to end the logjam, attract investor interest and release large amount of private investment into the mining sector.

In such situations simply exhorting the bureaucracy to act in the public interest will also not work, for a risk averse bureaucrat would prefer to refuse approvals than to grant them. Under the larger theme of reluctance of bureaucracy to be accountable, we identify 5 key problems and suggest some methods to address the challenge.

1. **Need for encouraging private agencies in exploration.** The critical challenge facing the Indian mining sector today is that mineral exploration continues to be under the public sector, with GSI and MECL undertaking exploratory work. In 2017-18, expenditure on exploration was approximately US\$ 0.17 billion through GSI, MECL and funds from NMET, the amount is significantly smaller than Peru, a small country, which spent US\$ 0.56 billion²¹. The global trend, in mineral-rich countries like Australia, Canada, Brazil, Chile and South Africa is for private entities or “junior exploration companies” to use venture capital, bear the risk of exploration, and then sell mineral concessions to bigger miners. **The present method of auction can be used for exploration and mining rights for surficial minerals, where the public agencies have explored sufficiently to date.** The provision in the Mineral Laws Amendment Ordinance 2020 for considering the grant of PL/ML for the NERP holder, should be harnessed to the fullest. Simple and transparent provisions providing requisite incentive to the NERP holder will be the key to attract investment in exploration.

2. **Impact on investor confidence due to legal sanctions for violations:** Even though the policy regime changed in 2015, mining in India is still hit by earlier legal sanctions. For instance, the Supreme Court ruled a blanket ban on mining in Goa in February 2018 and only recently on 29th January 2020, did it finally allow the transportation of already mined iron ore. The gap of two years in allowing the transportation of already mined ore and the blanket ban by the Supreme Court without looking into the merits of each mine individually have hit investor confidence deeply. A spate of decisions by the judiciary in recent years in India reveal that it is not well clued into economic and

²¹ FIMI 2018, Roundtable on Exploration

business issues as much as is required. Using first principles of natural law as the primary criteria, does not necessarily lead to economically sensible decisions. Moreover a few months delay in judicial decision-making can lead to immense economic losses and sometimes even insolvency. Given these underlying problems there is a reluctance of many global players to be involved in mining in India. **While the long-term solution of greater judicial education on economic and industry issues is obvious there are two short term solutions. (A) The government should endeavour to plug the multiple interpretation of laws, restraining the mining companies and avoiding strict judicial pronouncements. (B) A special bench of the Supreme Court needs to be set up to quickly and in a time bound manner settle any mining related matters.**

3. **Lack of clarity on environmental guidelines:** One of the greatest challenges in doing business in India is the multiplicity of rules/orders from different government departments and agencies. Hence, guidelines are continuously being issued, in response to issues as they emerge, making it extremely difficult to be compliant. More importantly the papers already in the system for obtaining an approvals keep on getting held up because of ever changing guidelines and sometimes even the expectation of an imminent change holds up such approvals. **The solution here is simple - a comprehensive and updated checklist of environmental guidelines for mining may be circulated online, and any further changes may be done at one source. Moreover, as has been decided by the GST council recently, guidelines will change only once or twice a year. While this may call for extensive coordination at the back-end, the Ministry of Mines can take up this task to ensure clarity for all mining firms, and taking it forward to the level of single-window-clearance.**
4. **State-level steps that precede auctions:** State governments lack the capacity to undertake all pre-auction steps in time. To ensure completion of pending, there needs to be greater involvement of Central agencies such as Geological Survey of India, Mineral Exploration Corporation. Institutional capacity needs to be ramped up in key states to ensure that preparatory work such as surveys, land schedules, pre-feasibility assessments, fixing reserve price and preparation of bidding documents are all

completed on time. There needs to be consistency across states in bidding terms. **Special cells need to be set up, with representation from the requisite multiple authorities to expedite clearances, this is akin to the single window approvals process in mining. What will make it work, rather than remain on paper, is to ensure frequent, transparent monitoring of the entire process of granting clearances.**

5. **Bureaucratic freeze:** The bureaucratic freeze has been well documented in recent years and appears to be worsening with time. While investigations into wrongdoing are but natural and occur in the private sector as well, **but the accountability is not of the same level in the Government. There needs to be concerted examination of the reasons for long delays and action may be taken for lapses, and at the same time rewarding the timely action taken by the officials. All pending proposals should be granted in a time bound manner, not rejecting them only on frivolous grounds.**

Finally, mining is too important a sector to be left to status quo and poor decision-making to take over. It has massive impact on the economy both in terms of employment and in terms of ensuring a low-cost sustainable economy. It is for the government to ensure that such an ecosystem is created for it to grow and contribute to the maximum.

Appendix 1 Timeline - Highlights of Legislation of the Mining Sector

Year	Explanation
1948	Mines and Minerals (Regulation and Development) Act, 1948, the first legal framework in independent India for the regulation and development of mines. Establishment of the Indian Bureau of Mines (IBM) as the main regulatory agency for monitoring and supervising mining activity in the country.
1950	Legislative powers of the Central and State governments clearly defined: Entry 54 of List I in the Seventh Schedule of the Constitution empowered the Central government to regulate mining activities and the development of minerals. Entry 23 of List II in the Seventh Schedule empowered the State Governments to frame rules and regulations in respect of mining activities and mineral development, subject to the provisions of List I.
1956	The Industrial Policy Resolution, 1956 (IPR) put major minerals such as coal, lignite, mineral oils, iron ore, copper, zinc, atomic minerals, etc. in Schedule A, which was reserved exclusively for the public sector, and minor minerals in Schedule B, in which the private sector was allowed to participate in mining activities along with the public sector.
1957	In line with IPR, Mines and Minerals (Regulation and Development) Act, 1957 enacted for the regulation of mines and development of minerals, applicable to all minerals except mineral oils. Mineral Concession Rules (MCR) and Mineral Conservation and Development Rules (MCDR), were framed under the Act. While the MCR deals with the major minerals the State Governments are free to frame their own rules for mineral concessions with respect to minor minerals.
1972	First amendment in The Mines and Minerals (Regulation and Development) Act, 1957, enhancing government control over mining through such measures as premature termination of MLs, lowering of ceiling on individual holdings, power to modify MLs and for the Central government to undertake prospecting and mining operations in certain areas, removal of ceiling on royalty charged on minerals, inclusion of provision of dead rent as part of the Act, ¹ and enhancement of penalties
1986	First Schedule minerals, in which prior approval of the Central government had to be obtained under the Act, were increased in number from 27 to 38, the Central government was authorised to reserve areas for Public Sector Undertakings (PSUs), and mining plan approval was made compulsory.
1988	Under an amendment in the Mineral Conservation and Development Rules, IBM was given the powers of approval of scheme of mining/Progressive Mine Closure Plan and Final mine closure plans.
1993	National Mineral Policy (NMP) introduced the idea of encouraging private investment in exploration and mining. Thirteen major minerals—iron ore, manganese ore, chrome ore, sulphur, gold, diamond, copper, lead, zinc, molybdenum, tungsten, nickel, and platinum group of minerals—hitherto reserved exclusively for the public sector were opened up to the private sector. Induction of foreign technology and foreign participation in exploration and mining was encouraged and foreign equity investment in joint ventures (JVs) in mining promoted by Indian companies was allowed. While generally there was a limit of 50 per cent on foreign equity the government announced its intention to consider relaxation of this limit on a case-by-case basis

1994	Amendment in the Mines and Minerals (Regulation and Development) Act and in the MCR and MCDR to simplify the procedure for grant of mineral concessions so as to attract large investment through private sector participation
1996	Concept of Large Area Prospecting Licence (LAPL) was introduced and guidelines issued. The area for a single Prospecting Licence for facilitating aerial prospecting was enhanced from 25 sq. km to 5000 sq. km, with a proviso that the aggregate area held by a single party would not exceed 10,000 sq. km in the whole country.
December 1999- January 2000	Amendments in MMDR Act, 1957, MCR and MCDR: Introduction of the concept of reconnaissance operations as a distinct stage prior to prospecting, and replacement of LAPL by the instrument of Reconnaissance Permit (RP); RP holder to progressively relinquish the area down to 1000 sq. km or 50 per cent of the area granted, whichever was less, at the end of two years and to 25 sq. km at the end of three years; RP holder to get priority in the grant of PLs within reconnaissance areas subject to certain conditions; Minerals listed in the First Schedule requiring prior approval of the Centre were brought down from 11 to 10; Further delegation of powers to State Governments included power to renew lapsed PLs/MLs; to grant RP/PL/ML for areas that were not compact or contiguous; to transfer MLs in respect of minerals under Part C of the First Schedule; to permit amalgamation of two or more adjoining MLs; Liberalisation of area restrictions of RP/PL/ML by making such restrictions applicable state-wise; In the case of large mining operations, the ML would not lapse if mine development did not take place in a period of two years.
2015	MMRD Amendment Act, 2015 replaces the MMRD, 1957 <ul style="list-style-type: none"> ● Adds more minerals in the notified minerals category under an additional Fourth Schedule: bauxite, iron ore, limestone and manganese ore with further amendments are notified by the Central Government; ● Creates a new category of mining licence, i.e. the prospecting licence-cum mining lease, which is a two stage-concession for the purpose of undertaking prospecting operations (exploring or proving mineral deposits), followed by mining operations; ● Provides relaxation for maximum area limits by amending the provision of just providing a single entity with one mining lease for a maximum area of 10 sq km. Now the Central Government can increase the area limits for mining, instead of providing additional leases. ● Under this Act the mining lease period for all minerals other than coal, lignite and atomic minerals has been increased from 30 years to 50 years and after the license lapses, the lease will be put for auction and cannot be renewed. ● Specifies that any lease granted before the commencement of the Act shall be extended: (i) up to March 31, 2030 for minerals used for captive purpose (specific end-use) and up to March 31, 2020 for minerals used for other than captive purpose, or (ii) till the completion of renewal period, or (iii) for a period of 50 years from the date of grant of such lease, whichever is later. ● Provides State Governments the power for granting mining leases and prospecting license-cum-mining leases for both notified and other minerals with the approval of Central Government. All leases are granted through auction by competitive bidding, including e-auction.

	<ul style="list-style-type: none"> ● Provides the holder of a mining lease or prospecting license-cum-mining lease (obtained through auction process) the right to transfer the lease to any eligible person, with the approval of the State Government as specified by the Central Government. ● Provides for the creation of a DMF. Under this Act requires every mine lease holder is mandated to contribute 30 per cent of the royalty amount (for leases granted prior to January 12, 2015) and 10 percent of royalty (for leases granted after January 12, 2015) to the DMF which is required to be utilised by the District Collector/Magistrate for development and socio-economic and environmental activities in and around areas where mining operations are carried by the lease holder. ● Lays down rules and regulations for the creation of a National Mineral Exploration Trust (NMET) regional and detailed mine exploration. Licensees and lease holders are mandated to contribute two per cent of royalty towards NMET exploration activities.
January 2020	<p>The Mineral Laws (Amendment) Ordinance, 2020 amends the Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act) and the Coal Mines (Special Provisions) Act, 2015 (CMSP Act). The CMSP Act provides for the auction and allocation of mines whose allocation was cancelled by the Supreme Court in 2014. Schedule I of the Act provides a list of all such mines; Schedule II and III are sub-classes of the mines listed in the Schedule I. Schedule II mines are those where production had already started then, and Schedule III mines are ones that had been earmarked for a specified end-use.</p> <ul style="list-style-type: none"> ● Removes restriction on end-use of coal: Currently, companies acquiring Schedule II and Schedule III coal mines through auctions can use the coal produced only for specified end-uses such as power generation and steel production. The Ordinance removes this restriction on the use of coal mined by such companies. Companies will be allowed to carry on coal mining operation for own consumption, sale or for any other purposes, as may be specified by the central government. They may also utilise such coal in their subsidiaries' plants. ● Increases eligibility for auction of coal and lignite blocks: The Ordinance clarifies that the companies need not possess any prior coal mining experience in India in order to participate in the auction of coal and lignite blocks. Further, the competitive bidding process for auction of coal and lignite blocks will not apply to mines considered for allotment to: (i) a government company or its joint venture for own consumption, sale or any other specified purpose; and (ii) a company that has been awarded a power project on the basis of a competitive bid for tariff. ● Introduces Composite license: Currently, separate licenses are provided for prospecting and mining of coal and lignite, called prospecting license, and mining lease, respectively. Prospecting includes exploring, locating, or finding mineral deposit. The Ordinance adds a new type of license, called prospecting license-cum-mining lease. This will be a composite license providing for both prospecting and mining activities.

- Allows Non-exclusive reconnaissance permit holders to get other licenses: Currently, the holders of non-exclusive reconnaissance permit for exploration of certain specified minerals are not entitled to obtain a prospecting license or mining lease. Reconnaissance operations means preliminary prospecting of a mineral through certain surveys. The Ordinance provides that the holders of such permits may apply for a prospecting license-cum-mining lease or mining lease. This provision will apply to certain licensees as prescribed in the Ordinance.
- Allows transfer of statutory clearances to new bidders: Currently, mining leases for specified minerals (minerals other than coal, lignite, and atomic minerals) can be transferred to new persons through auction upon expiry. Such new persons are required to obtain statutory clearances before starting mining operations. The Ordinance provides that the various approvals, licenses, and clearances given to the previous lessee will be extended to the successful bidder for a period of two years. During this period, the new lessee will be allowed to continue mining operations. However, the new lessee must obtain all the required clearances within this two-year period.
- Removes requirement of prior approval from the central government: Under the MMDR Act, State Governments require prior approval of the central government for granting reconnaissance permit, prospecting license, or mining lease for coal and lignite. The Ordinance provides that prior approval of the central government will not be required in granting these licenses for coal and lignite, in certain cases. These include cases where: (i) the allocation has been done by the central government, and (ii) the mining block has been reserved by the central or State Governments to conserve a mineral.
- Permits advance action for auction: Under the MMDR Act, mining leases for specified minerals (minerals other than coal, lignite, and atomic minerals) are auctioned on the expiry of the lease period. The Ordinance provides that State Governments can take advance action for auction of a mining lease before its expiry.

Appendix 2 Indicative List of Applicable Acts and their Approvals and Clearances Required for Mining

SN	Applicable Act	Clearance required	Administered by
1	Forest Conservation Act, 1980	Forest clearance (3-7 years)	MoEFCC
2	Wild Life (Protection) Act, 1972	Wild life clearance (sanctuary, reserve or special zone clearances) (3-7 years)	MoEFCC
3	Environment Protection Act, 1986	1. Environmental clearance (1-3 years)	MoEFCC
		2. Ground water clearance (Centre/State)	
4	Water (Prevention and Control of Pollution) Act, 1974/ Air (Prevention and Control of Pollution) Act, 1981) and Authorisation under Hazardous Wastes (Management and Handling) Rules, 1989	1. Consent to Establish (CTE) before establishing (before starting construction of site) from pollution control board (1-2 years)	MoEFCC
		2. Consent to Operate (CTO) to start operations from pollution control board (1-2 years)	
5	Explosive Act 1884	Explosive license	DIPP
6	Railways Act, 1989	Railway siding approval	M/o Railways
7	Petroleum Act, 1934	Approval for diesel storage	M/o Petroleum & Natural Gas
8	Electricity Act, 2003	1. Power line from State Discom	M/o Power

		2. Clearances relating to work under an existing transmission line or shifting of the transmission line	
9	Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (LARR) Act, 2013 (also Land Acquisition Act, 2013)	Land Owner's Consent	M/o Rural Development

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