JUST TRANSITION OF UNPROFITABLE AND END-OF-LIFE MINES

A Legal Assessment

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List of Abbreviations

BALCO	Bharat Aluminium Company Limited
BCCL	Bharat Coking Coal Limited
CBA	Coal Bearing Areas (Acquisition and Development) Act
CCL	Central Coalfields Limited
CEJA	Climate and Equitable Jobs Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIL	Coal India Limited
CITU	Centre of Indian Trade Unions
CMN	Coal Mines (Nationalisation) Act
CMPDI	Central Mine Planning and Design Institute
COP	Conference of the Parties
CTO	Consent to Operate
CPA	Critically polluted areas
CPCB	Central Pollution Control Board
EC	Environmental clearance
ECL	Eastern Coalfields Limited
EP Act	Environmental Protection Act
EPF	Employee provident fund
ETUC	European Trade Union Confederation
FC	Forest clearance
FGD	Focus group discussions
FLMPA	Federal Land Policy and Management Act
FMCP	Final Mine Closure Plan
GoI	Government of India
ICMM	International Council on Mining and Metals
ID Act	Industrial Dispute Act
IGF	Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development
IIT-ISM	Indian Institute of Technology (Indian School of Mines)
ILO	International Labour Organization
INTUC	Indian National Trade Union Congress
IR	Industrial Relations Code
ITUC	International Trade Union Confederation
MCL	Mahanadi Coalfields Limited
MCP	Mine closure plans
MDO	Mine-developer-cum-operator
MPPA	Mining Plan Preparing Agencies
NCDC	National Coal Development Corporation
NCEUS	National Commission for Enterprises in the Unorganised Sector
NCL	Northern Coalfields Limited
NEC	North Eastern Coalfields
NEERI	National Environmental Engineering Research Institute
OB	Overburden
OSH	Occupational Safety, Health and Working Conditions Code
OSMRE	Office of Surface Mining Reclamation and Enforcement
PMCP	Progressive Mine Closure Plan
PSU	Public Sector Undertakings
RCRA	Resource Conservation and Recovery Act
RE	Renewable energy
SCCL	Singareni Collieries Company Limited
SECL	South Eastern Coalfields Limited
SMCRA	Surface Mining Control and Reclamation Act
SPCB	State Pollution Control Board
TPP	Thermal power plant
USA	United States of America
VRS	Voluntary Retirement Scheme
WCL	Western Coalfields Limited

EXECUTIVE SUMMARY

At COP-26, India agreed to gradually phase down coal to achieve the climate change goals. However, this is not going to be an easy task considering coal still meets half of India's energy needs, is a major source of employment in the coal regions, and a significant source of government revenue. Therefore, a strategic pathway needs to be adopted for an environmentally and socially responsible transition, and for the implementation of timebound measures.

A starting point for just transition in the coal sector can be the closure of low-producing, unprofitable and end-of-life mines. There are many such mines in the states of Jharkhand, Chhattisgarh, Madhya Pradesh, and West Bengal. A well-planned closure of these mines, taking into consideration the measures for a social transition, can be a win-win for the industry, as well as for the workers and the local community who can engage in alternative economic activities after the closure of mines. However, to achieve this, having appropriate laws and regulations in place, along with a well-designed governance mechanism, is necessary.

This report undertakes a legal assessment for ensuring a just transition in the coal mining sector, in the context of foreseeable closures of unprofitable and end-of-life mines. The assessment involves evaluating the scope, as well as the associated challenges and limitations of the laws and regulations that are related to the closure of coal mines. Taking into consideration the global experiences of a just coal transition, and the context of India's coal sector and the regions where such activities are concentrated, the analysis is focused on laws and regulations pertaining to environment, land, and labour, which have salience for a just closure of mines. Having well-designed laws and regulatory mechanisms pertaining to these are important for allowing repurposing of land and infrastructure post closure, support transition of the workforce through adequate social safety nets, and leave a better environment for the local community that also has bearing on people's lives and livelihoods. The evaluation has also been supported by the perspectives of practitioners and experts, as well as ground observations.

The assessment shows that the issue of coal mine closure in India is primarily addressed under the environmental and mining laws and through subordinate legislations and guidelines developed under them. However, considering the multi-faceted issues related to coal mine closure under the principles of a just transition, the current laws and regulatory mechanisms remain inadequate, and require reform measures to be undertaken to facilitate a just closure and transition process.

To achieve a well-planned and well-managed just transition, it is necessary to have appropriate laws and regulations in place

A. Key observations

The absence of guidelines to facilitate the transfer of coal mining land to the respective state governments after mine closure, undermines the prospects of land repurposing.

The Coal Bearing Areas (Acquisition and Development) Act, 1957 (CBA), which is the most important law related to coal mining land, remains ambiguous on the transfer of land to concerned state government authorities once mines are closed. The land is presumed to be given in perpetuity to the coal companies.

While the coal mine closure guidelines, and notification(s) issued by the Ministry of Coal in subsequent years has made it clear that the land is 'leased' to coal companies for a defined period and must be surrendered to the state governments upon closure, the lack of synergy between the law and the guidelines, and directions on how this transfer may happen, particularly for land acquired under the CBA Act, has led to confusion on surrendering the land.

Mine closure plans and guidelines are not designed to allow repurposing of coal mining land.

The existing closure plans, as designed, have allowed/allow significantly high external overburden dumps to exist outside the pits, as well as internal overburden dumps of considerable height inside the pits. Besides, a void of significant area and depth is allowed to exist and is filled with water in the quarry area. An assessment of the post-closure land use of opencast mines suggests that about 57% of the mine lease area is identified for keeping as backfilled excavated area, external overburden dump and voids. Considering such mine closure plans, the land will not be ready for repurposing once mines are closed. Ideally, in order to maximise the area that can be repurposed, extreme surface undulations need to be minimised.

There are inadequate financial resources to ensure environmentally and socially responsible closures.

The financial costs of coal mine closure, as estimated, are grossly inadequate. The rates are based on a standard unit cost (per hectare of land) and are not site-specific. Also, the rates do not differentiate between new mines and legacy mines. The cost of closures will be more substantial for the legacy mines considering that these mines have been operating for years, even before the closure guidelines came into effect, and have not followed appropriate progressive mine closure practices during their operational years. These mines will have a significant land area under external overburden dumps, suffer from poor mine reclamation, poor soil and water management practices, among other things.

The estimated costs for all mines are also primarily limited to the components associated with the technical closure and biological reclamation activities. Important factors, such as preparing the mining land for repurposing, environmental remediation, and costs of social transition have not been accounted for.

The approach for environmental management of mines and monitoring of environmental compliance remains fragmented.

The environmental compliance conditions for mines are provided under various permits and plans as approved by the concerned authorities. These include conditions as stipulated in the environmental and forest clearance letters, consent orders and mining plans, that are monitored by various authorities. However, there are duplicities in such conditions, which create confusion among authorities regarding monitoring and data management. Also, there is no provision to assess environmental risk pathways as part of mine closure planning.

The labour laws have inadequate security provisions for contractual and informal workers in the event of mine closures.

The existing labour laws, including the standing orders of the coal mining companies, do not account for transition support and the necessary compensation for contractual and informal workers in the event of coal mine closures. As per current standing, the law remains favourable to the industrial establishments or the employers, and allows them to retrench workers with very little difficulty during closures. For contractual and informal workers, the applicable labour laws also do not create any liability for the principal employer or the contractor to provide any compensation, transition support, alternate means of employment, or skilling assistance to the workers when facilities are being closed.

Considering the large number of contractual and informal workers engaged in the coal industry, this is not only a major concern for just transition, it can also potentially create local unrest and community alienation hindering the closure process.

Therefore, a comprehensive set of regulatory reforms is necessary to guide coal mine closures in the coming years. These reforms must address issues related to environmental responsibility, social obligations, and the economic development of the coal mining areas.

The estimated costs of coal mine closure do not account for factors such as preparing the land for repurposing and social transition

B. Recommendations for legal reforms

Reforming the CBA Act and the issuance of guidelines regarding the term of lease hold and land transfer.

The provisions of the CBA Act (1957) that are related to the granting of coal mine lease and lease period need to be revised, and provisions for surrendering of land after the closure of mines need to be included. At the same time, guidelines for the transfer of land to the respective state governments need to be formulated. These should also take into account the abandoned and legacy mines.

Development of a comprehensive mine closure framework taking into consideration aspects of land repurposing, environmental risks and remediation, and social transition.

A comprehensive mine closure framework needs to be developed integrating the vision and objective of closure, among other aspects. The mine closure plans also need to be designed in a particular manner so that maximum land is available for repurposing. The provisions of social transition must be integrated, and post-closure monitoring should be strengthened. Also, the abandonment cost needs to be re-evaluated and proposed accordingly after taking into account the mine type, the age of the mines, and the geo-morphological aspects.

Development and institution of a social transition framework that is aligned with just transition goals.

The framework shall, among other things, include provisions for (but not limited to) community sensitivity assessment during the transition, economic diversification planning, health impact assessments, provisions of skilling and reskilling, communication with local communities, stakeholder engagement, and grievance management mechanisms.

Institution of reform measures to ensure environmental risk assessment and remediation measures.

There is a need for reform of regulatory provisions under the Environmental Protection (EP) Act (1986) to institute provisions for assessing environmental risk pathways and undertaking necessary remediation measures before closure.

Integration of provisions in the labour codes to strengthen security for contractual and informal workers and to provide them with the necessary transition support.

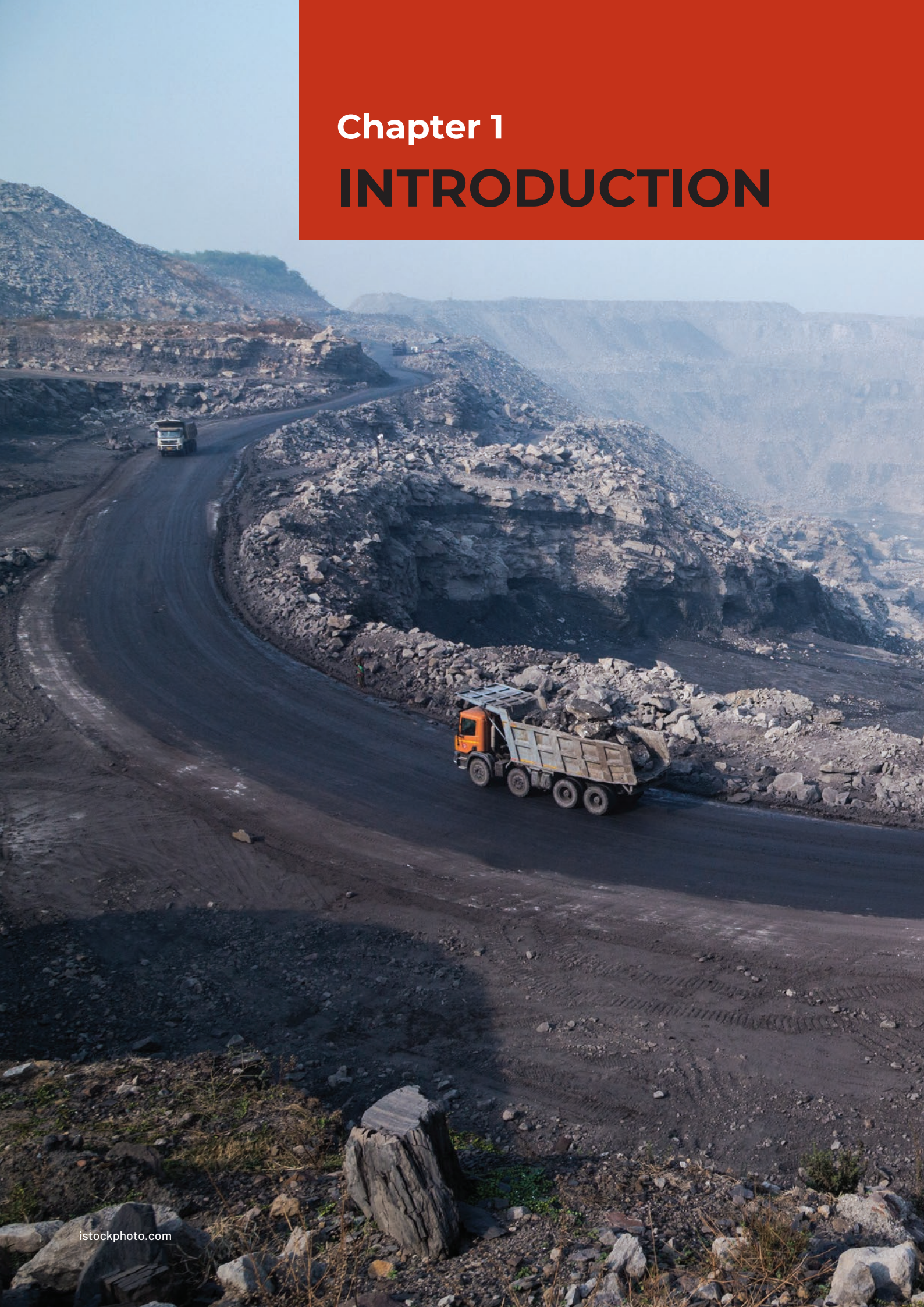
The labour codes — particularly the Industrial Relations Code (2020), the Occupational Safety, Health and Working Conditions Code (2020), and the Social Security Code (2020) — need to suitably integrate provisions for informal or casual workers with respect to their terms of engagement, retrenchment and transition support in the event of industrial closure.

The labour laws need to suitably integrate provisions for informal workers with respect to their terms of engagement, retrenchment and transition support

The Coal India Limited Standing Orders need to be revised accordingly and should include the integration of provisions of worker transition support, such as issues related to compensation, skilling and reskilling, and support for families of workers of lower grade and low income.

Chapter 1

INTRODUCTION



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1.1 Background

The Government of India (GoI) aims to achieve net zero emissions by 2070, as announced at the United Nations Climate Change Conference (COP 26) in November 2021.[1] At the same time, ambitious renewable energy (RE) targets, such as meeting 50% of the country's electricity requirement through renewables by 2030, have been set by the GoI.[2] Besides, the government and industry leaders are also deliberating on using non-conventional fuels for heavy industries, such as the steel sector, which is highly reliant on coal and is a significant contributor to greenhouse gas (GHG) emissions.

Accomplishing the RE targets, decarbonising the industrial sectors, and achieving an overall net zero emission target by 2070 will require India to plan a systematic and timely phase-down of coal mining activities, alongside a transition of the coal-dependent sectors, such as coal-based thermal power plants, steel, cement, various medium, small and micro enterprises (MSME), etc., over the next three decades. At the same time, considering the realities of India's coal regions, it must be ensured that the process of phasing down is also 'just', so that alongside the climate goals, net positive environmental and socio-economic outcomes can also be achieved. The need for ensuring a just transition while phasing down coal has also been reiterated in the Paris Agreement (2015)[3] and the Glasgow Climate Pact (2021).[4]

While, in principle, the need for coal phase down is gaining momentum, in practice how efficiently and timely such phase down can happen, while remaining environmentally and socially responsible, is contingent on a variety of factors. A defining one among them is the regulatory obligations associated with the closures of coal mines and the processes related to them.

The closure of coal mines in India, as in other parts of the world, requires fulfilling regulatory obligations by the companies with respect to three key factors — environment, land management, and labour. Considering the variety of laws, regulatory procedures and institutions that are related to these factors, it is important to understand how well defined these laws and procedures are, and what are the limitations that will have implications on closing down coal mines in the coming decades based on the principles of just transition.

This report offers an in-depth assessment of various regulations and associated mechanisms with respect to coal mine closures in India, in the light of ensuring a just transition and time-bound climate action. The assessment is a timely exercise as there are already many unprofitable coal mines in India which are primed for closure in key coal states such as Jharkhand, Chhattisgarh, Madhya Pradesh, Maharashtra, etc. For example, in Chhattisgarh, 66% of the mines are unprofitable, and a majority of them are underground operations. Similarly, in Madhya Pradesh, nearly 60% are unprofitable and most of them are underground. In Jharkhand, both opencast and underground mines are unprofitable. As per industry information (obtained through RTI), there are over 100,000 workers employed formally (as departmental and contractual workers) in 199 unprofitable mines. They constitute about 29% of formal workers in the coal mining industry. Besides, going by the trend of informal workers associated with mining-related activities, it can be estimated that additionally at least 1.5 to two times workers are engaged informally.

Besides, many old mining areas, such as those in Jharkhand[5] and Chhattisgarh[6], are also facing exhaustion of reserves, and will be ready for closure in the coming years. There are also a large number of abandoned and discontinued mines in various states in possession of the coal companies that will need to be closed scientifically in the coming years to make the valuable land available for repurposing. On a macro scenario, the closure of the unprofitable and low-producing mines will not affect India's energy security or development vision, as there are a limited number of 'mega mines', which are currently supporting the country's energy needs. For example, nearly 75% of the production of Coal India Limited (CIL), which is India's largest coal producer, comes from only 35 mega mines,[7] and the company plans to reach one billion tonnes of production target by 2023-24, from about a total of 50 such high-yielding mining projects.[8]

50-60% of the mines are unprofitable in most of the key coal states

Table 1: Unprofitable and low-producing mines in key coal states

State	Total mines	No. of profitable mines	No. of unprofitable mines				Data not available*
			Total	Opencast	Underground	Mixed	
Jharkhand	106	35	56	31	16	9	15
Chhattisgarh	50	9	33	6	26	1	8
Madhya Pradesh	56	8	33	4	28	1	15
Maharashtra	54	20	25	12	13	0	9
Odisha	23	16	4	0	4	0	3
West Bengal	70	15	48	4	42	2	7
Uttar Pradesh	3	3	0	3	0	0	-

Source: As per RTI responses procured by iFOREST, 2021-2022 for 199 unprofitable mines in seven states out of total 449 coal mines in India.

*Data not provided till the time of this research by respective authorities

Table 2: Number of abandoned/discontinued mines

Name of the company	No. of mines
Eastern Coalfields Limited (ECL)	84
Bharat Coking Coal Limited (BCCL)	42
Central Coalfields Limited (CCL)	29
Northern Coalfields Limited (NCL)	1
Western Coalfields Limited (WCL)	56
South Eastern Coalfields Limited (SECL)	66
Mahanadi Coalfields Limited (MCL)	2
North Eastern Coalfields (NEC)	4
Total CIL mines	**284**
Singareni Collieries Company Limited (SCCL)	9
Total mines	**293**

Source: Ministry of Coal, 2022, Parliamentary response in Rajya Sabha

Table 3: Workers in unprofitable mines

State	Estimated number of workers
Chhattisgarh	22,229
Jharkhand	35,012
Odisha	1,453
Madhya Pradesh	15,012
Maharashtra	14,593
West Bengal	14,459
Total	**102,757**

Source: As per RTI information obtained from coal companies

A planned closure of unprofitable and end-of-life mines will not affect India's energy security and development vision, and can help the country to better prepare for a just transition

A review of existing regulations and associated mechanisms, and identifying what reforms are necessary, therefore, is a necessary step towards having the right systems in place to ensure efficient and timebound closure, and a just transition. The study holds significance for guiding the closure of the low-producing, unprofitable and end-of-life mines in the immediate future, and supporting a just transition pathway in the next four decades in India's coal regions for achieving the country's climate change goals.

1.2 Objective

Mine closure involves a number of issues including, physical closure of the mine, disposal of infrastructure and physical assets, environmental management and remediation, financial aspects of the closure and labour issues, among others. There are a number of laws and regulatory provisions related to various aspects of closure. Considering that robust laws and regulatory mechanisms are necessary to ensure responsible mine closure, the objective of this report is to:

i. Evaluate the scope of the laws and regulations, specifically pertaining to aspects of environment, land and labour related to coal mine closure under just transition principles;

ii. Examine the mechanisms concerning closure and fulfilment of regulatory obligations;

iii. Identify the key limitations in existing laws and mechanisms; and,

iv. Outline reforms that are necessary with respect to these laws and associated mechanisms to achieve a just transition.

The observations and recommendations of the report are intended to enable necessary policy discourse and institute regulatory reforms to support just transition of coal mines in the coming years and guide future pathways.

1.3 Study approach

The report has relied on the following approach to understand the procedures and gaps in the legal landscape during coal mine closure.

i. Literature review to evaluate regulations and practices on coal mine closure globally.

ii. Legal review of laws and regulations of India, including:

- Review and analysis of salient central government laws and regulations related to coal mine closure, environmental management and remediation, labour issues, land and assets, finances, and other relevant matters, and associated processes.
- Review of state-specific laws and regulations on these matters (if any) in coal-rich states such as Jharkhand, Odisha, and Chhattisgarh.

iii. Case studies to evaluate the challenges (if any) of coal mine closure under the current mechanism and for achieving a just transition.

iv. Stakeholder consultations held with various constituencies through interviews and focus group discussions (FGDs):

- Officials of Public Sector Undertakings (PSU) of the coal industry, including Central Coalfields Limited (CCL), Mahanadi Coalfields Limited (MCL), South Eastern Coalfields Limited (SECL);
- Private coal mine-developer-cum-operator (MDO);
- Coal Controller's Organisation;
- Central Mine Planning and Design Institute (CMPDI);
- State Pollution Control Board (SPCB) of Odisha;
- District officials of key mining districts in Jharkhand, Chhattisgarh and Odisha;
- Labour union representatives at the Centre and state levels, including the Indian National Trade Union Congress (INTUC), the Centre of Indian Trade Unions (CITU), and the Jharkhand Colliery Mazdoor Sangh; and,
- Coal mine workers.

In-depth review of laws and regulations, along with case studies and feedback from stakeholders, have been considered for the assessment

The literature review, in-depth legal assessment of various laws and mechanisms associated with a 'just' approach of coal mine closure, on-ground observations and feedback from stakeholders have been collectively considered to develop the report.

Chapter 2

GLOBAL EXPERIENCES ON COAL MINE CLOSURE LAWS

2.1 Background

Mine closures, until recent years, have been perceived as an environmental issue by most countries and the industry at large. Therefore, the regulatory provisions pertaining to closures are largely related to the environmental and mining laws in various countries. A comprehensive legal framework for mine closure, covering various aspects that are intricately related to a just closure process, such as environment responsiveness, land rehabilitation and repurposing, labour issues, and other socio-economic aspects, has not been developed in most countries.

A study conducted by the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF) of 30 countries across North America, South America, Europe, Asia, Africa, and Oceania (2021) showed that 76% of the countries required preparation of a mine closure plan as part of mine development; however, the comprehensiveness of these plans considering all aspects of mine closure — technical issues, environmental/ecological aspects, and socio-economic aspects, etc. — is extremely limited.[9]

There is also a huge problem with the financial assurance that is mandated. The assessment showed that the full amount of the estimated closure cost is secured through financial assurance only in a few countries. Also, often, the real costs of closure are underestimated. This puts many countries and coal regions at 'financial, environmental, and social risk' in case mining companies fail to implement mine closure measures.[10] At the same time, it is a business risk for the companies if they have to pay for the costs later.[11] (*See box: Risks of underestimated closure costs, the case of Lathrobe valley, Australia*)

In recent years, it is being increasingly recognised that mine closures must also deal with socio-economic aspects that need to be addressed through a comprehensive set of regulatory provisions. Various governments are also recognising the significance of post-mining transition, besides mine closure. However, regulations and policies to effectively execute this are extremely limited.[12]

Zeche Zollern is a decommissioned hard coal mine complex in Dortmund, Germany

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RISKS OF UNDERESTIMATED CLOSURE COSTS: THE CASE OF LATROBE VALLEY, AUSTRALIA

Latrobe Valley, situated in the Victoria province of Australia, is a major coal mining and power generation region of the country. Coal was first discovered in the Valley in 1873, and currently there are three operational opencast coal mines — Hazelwood, Yallourn, and Loy Yang — producing 64 million metric tonnes (MMT) of coal annually.

In 2014, a major fire incident occurred in the Hazelwood mine. The mine has been operational in the region for about 65 years (first established in 1949 by the State Electricity Commission of Victoria, and later privatised in 1996). Ever since the mining activities began, about 720 MMT of coal and 175 million cubic metres of overburden have been removed from the mine. The operations have disturbed 2,543 hectares of land, of which about 22% (about 557 hectares) has been rehabilitated.

The fire incident, which also affected the local community, raised serious questions about mine management and mine closure practices and the associated costs. The 'Hazelwood Mine Fire Inquiry Report' brought out how poorly the costs were estimated, and directed a revision of 'security bond'. The revisions led to a five to seven times increase in the bond amount for all the mines as per the reassessed closure costs. For example, the bond for Hazelwood's owners, ENGIE, was increased from AU$ 15 million to AU$ 73.4 million.

The inquiry report also concluded that if the actual management and reclamation costs of the closure are not accounted for, mining companies will leave without closing these mines properly. This will worsen the problems of environmental pollution and land subsidence associated with mining activities, fire, etc., and also worsen the burden of abandoned mines. Therefore, much emphasis has been placed on proper mine management throughout its life and progressive closure.

The Hazelwood mine closed in 2017. Following its closure, ENGIE, the owner and operator of the mine, has begun works to decommission infrastructure and rehabilitate the site.

Source: Report of the Justice Bernard Teague AO Commission. (2016). Hazelwood Mine Fire Inquiry. Government of Victoria, Australia.

If the actual management and reclamation costs of the closure are not accounted for, mining companies will leave without closing the mines properly leading to land and environmental hazards

2.2 Legal approaches for coal mine closure following just transition principles

Considering the limitations, some of the major coal-dependent countries have started enacting regulations and developing frameworks to comprehensively address the issue of mine closure. While such experiences are limited, however, a review of some of the regulatory provisions, as being considered by federal and state governments, provides some important perspectives on the legal aspects of coal mine closure under considerations of just transition.

The imperative of following 'just closure' practices while closing a coal mine has prompted federal and state governments to enact regulatory reforms and develop integrated closure guidelines/frameworks to address issues of scientific closure, community engagement in the closure process, post-closure land use, post-closure monitoring, social responsiveness, and ensuring adequate closure funds, among others. Besides, some international agencies are also providing guidance on the development of integrated mine closure frameworks that can guide government policies and regulatory reforms.

Germany

Renowned for its successful approach of coal phase out in the Ruhr valley, which had been supported by a set of regulatory reforms, *(See box: Regulatory measures supporting hard coal mine closure in Ruhr)* the Government of Germany in 2020 enacted dual laws to support a just transition in various coal regions of the country to phase out coal by 2038. These include the 'Act to Reduce and End Coal-Powered Energy and Amend Other Laws' (Coal Exit Act), and the 'Structural Development Act' for mining regions.[13] The laws have been enacted in addition to the existing environmental and mining laws guiding mine closure practices in the country, as well as the social welfare policies that are in place.[14]

The Coal Exit Act (2020), which proposes a three-phase plan to phase out coal-powered energy by 2038, simultaneously outlines the compensations that must be provided to the affected mining companies and coal power plants and their workers.[15] For opencast mines, it has been specified that workers above the age of 58 years, who will lose their jobs as a result of the phase-out, can be granted 'transitional payments for a maximum of five years until they reach the pensionable age. Any reduction to their pension caused by taking early retirement can be offset'.[16]

The Structural Development Act for mining regions focuses on the structural policy aspects of a just coal transition to ensure that the affected regions do not bear the brunt of change

The Structural Development Act (2020) for mining regions is a complementary one to the Coal Exit Act, and focuses on the structural policy aspect of a just coal transition. The basic idea is that "the affected regions should not bear the full brunt of change". The law identifies a clear financial mechanism and "guarantees financial assistance for investment and other measures up to 2038" for various coal/lignite mining regions.[17] The investments are primarily aimed at developing economically beneficial infrastructure, creating jobs, and supporting environmental and landscape conservation.[18]

For example, it has been stipulated that the three lignite mining areas of the country will receive up to 14 billion euros from the federal government by 2038 which the regions shall use in developing local public transport, broadband and mobility infrastructure, or for environmental and landscape conservation. The states are required to contribute their own share as per the provisions of the German Basic Law in the Constitution. Besides, the federal government will directly invest 26 billion euros in research and other assistance programmes in the affected areas, which will also help in job creation. The government has plans to establish federal facilities in the mining areas which are expected to retain or create up to 5,000 jobs.[19]

Overall, Germany's strong public welfare laws underpin social security support for the workers. For instance, laid-off coal mine and power plant workers under the age of 58 (which the Coal Exit Act does not cover) are covered under the national Social Code that ensures the continuation of health and retirement benefits during phases of unemployment, and warrants payments under the public job retraining programme to support new vocational degrees and entry in new fields.[20] The Code also provides for strong unemployment protection, pension benefits, health insurance, social protection, etc.[21]

REGULATORY MEASURES SUPPORTING HARD COAL MINE CLOSURE IN RUHR

The experience of coal mine closure in Ruhr, Germany exemplifies how coordinated and supportive policy measures can ensure a process of just mine closure.

One of the most important aspects of the closure process had been to strengthen the engagement of workers. The Mining Codetermination Act (1951) gave the workers a voice equal to the industrialists in taking decisions for the closure and measures that need to be undertaken during such event. As a result, the workforce also agreed to forgo a wage increase, and a work redistribution programme was introduced.

At the same time, much emphasis was placed on the retirement programmes, especially early retirements. This was developed based on the transition payments system for coal industry employees that was introduced in 1972 by the state legislators. For those who were not entitled to the transition payments system, a specific 'social compensation plan' was created in 2012 under the 'Agreement on the closure of the Ruhr coal industry by 31 December 2018'. The agreement was negotiated between the German Coal Association and the trade union for mining, chemical and energy industries.

The Government of Germany also passed the Hard Coal Financing Act in 2007 to phase-out hard coal mining subsidies in the country by 2018 and protect every worker older than 42 years against unemployment.

Source: Galgoczi, B. (2019). Phasing out coal – a just transition approach. European Trade Union Institute. Brussels, Belgium.

The Mining Codetermination Act in Germany gave the workers a voice equal to the industrialists in taking decisions related to mine closure

United States

Coal mine management and closure issues in the United States of America (USA) have been largely guided by the regulatory provisions as provided under various environmental, mining, and land laws that are promulgated by the federal and state governments. The key environmental laws in this regard include the National Environmental Policy Act (1970), the Clean Air Act (1970), the Clean Water Act (1972), the Resource Conservation and Recovery Act (RCRA, 1976), and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, 1980).[22] With respect to mining laws, one of the most significant ones is the Surface Mining Control and Reclamation Act (SMCRA), which was enacted in 1977 (as amended in 2021) to deal specifically with environmental and land reclamation issues of coal mines, including the reclamation of abandoned mine areas.[23]

The reclamation of abandoned coal mining land and undertaking environmental remediation measures remain a key focus of mine closure activities in the USA. After the enactment of the SMCRA, the Office of Surface Mining Reclamation and Enforcement (OSMRE), under the aegis of the US Department of the Interior was set up, suggesting the significance of land-related issues (including of tribal land) that closure and reclamation activities are required to deal with.[24] The implementation of the SCMRA has two major areas of focus — first to ensure that the "coal mines operate in a manner that protects citizens and the environment during mining operations, and to restore the land to beneficial use following mining", and second, to implement a 'Abandoned Mine Land' programme to ensure closure and reclamation of such mine sites, and "address the hazards and environmental degradation resulting from two centuries of coal mining activities" before the enactment of the SMCRA.[25]

The reclamation of abandoned mines and the implementation of the SMCRA has further been bolstered by the Infrastructure Investment and Jobs Act, which was enacted in November 2021.[26] The law provided substantial annual grants for abandoned

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Abandoned #9 Coal Mine, Pennsilvanyam Carbon County, About 2000 feets underground

mine land and water reclamation projects under the provisions of the SMCRA. It has earmarked US$ 11 billion federal funds for depositing in the existing 'Abandoned Mine Reclamation Fund' which is to remain available until expended. The key purpose of the fund is to restore land and water resources, and environmental conditions that have been degraded by the adverse effects of coal mining practices, and ensure the protection of public health and safety from the adverse impacts of coal mining (Section 403, SCMRA). The law also requires an inventory to be developed and updated with respect to the closure, reclamation and decommissioning activities.[27]

Apart from the environment-related laws and the SMCRA, the Federal Land Policy and Management Act (FLMPA, 1976), and its subsequent amendments, regulates mining activities and mine closures on public lands. The Bureau of Land Management, entrusted with the implementation of the Act, requires a mine operator to submit a plan of operations and reclamation for proposed mining activities.[28]

Besides federal laws, recently, some state governments are also enacting regulatory measures to deal with mine closure practices under considerations of a just transition. One of the key examples in this regard is 'The Climate and Equitable Jobs Act' (CEJA) enacted by the state of Illinois in 2021. The law provides for worker transition measures, alongside coal mine closure. *(See box: Illinois Climate and Equitable Jobs Act: Enabling just coal closure).*

The Abandoned Mine Reclamation Fund is meant for restoring land and water resources, and environmental conditions, that have been degraded by coal mining practices, and ensuring the protection of public health

ILLINOIS CLIMATE AND EQUITABLE JOBS ACT, 2021: ENABLING JUST COAL CLOSURE

The Climate and Equitable Jobs Act (CEJA), 2021 sets Illinois on a path to a 100% clean energy future by 2050 by closing down of coal-based power plants by 2045, and transitioning to other clear energy systems. The central aspect of the legislation is a just transition for coal mine and power plant workers. The law has established an Energy Transition Workforce Commission, that has been tasked with the development of an Energy Transition Workforce Report. The report must capture the anticipated impact of the energy transition on workers, pertaining to the anticipated schedule of the closures of coal-based power plants, nuclear power plants, and coal mines across the state. The impacts that the commission needs to look into include layoffs, early retirements, salary changes, and any others that are considered relevant. The commission shall provide a comprehensive set of recommendations to address these.

The law also refers to the Displaced Energy Workers Bill of Rights, which instructs the Department of Commerce and Economic Opportunity to provide the following rights and benefits to (prospective) displaced energy workers:

- The workers must be given advance notice of the power plant or coal mine closure.
- The department will assist the workers to cope with the energy transition by educating them about various workforce training programmes for reskilling and retraining, providing services such as re-employment, training, work-based learning, and financial and retirement planning support.
- If workers are interested in entrepreneurial pursuits, the department will provide business consulting, planning, regulatory compliance, marketing, training, accessing capital, and government certification assistance.

The Act further elaborates on the roles and responsibilities of the owners of the coal mines and power plants. They are obligated to inform the workers 90 days before the closure regarding any employment opportunities provided by the employer. The closure report, which shall be submitted to the department 90 days prior to closure, must contain the transition support provided to workers by the company, including education, assistance for training, transportation support or child care resources to attend training sessions, career counselling, resume support, etc. Any child of the eligible displaced worker has the opportunity to receive a transition scholarship from the Energy Transition Assistance Fund.

To remove any financial barriers and ease the transition process for the workers and local communities, the law has created several funds and grants, such as, Funds for Workforce Training Programme, Jobs and Environmental Justice Grant, Clean Energy Jobs and Justice Fund, and Energy Transition Community Assistance Grant. These grants and funds will support the workforce programmes for reskilling and retraining, help black and brown businesses gain a foothold in the clean energy market, support businesses by providing capital, low-interest or zero-interest loans, and financially support communities undergoing mine closure.

Overall, the law addresses the economic and social impacts of coal mine closure by developing targeted programmes and enabling just transition measures for the coal communities and workers.

Source: Climate and Equitable Jobs Act, 2021. Government of Illinois, USA

The Climate and Equatable Jobs Act has created several funds and grants to support reskilling and retraining of workers, and financially support communities undergoing mine closure

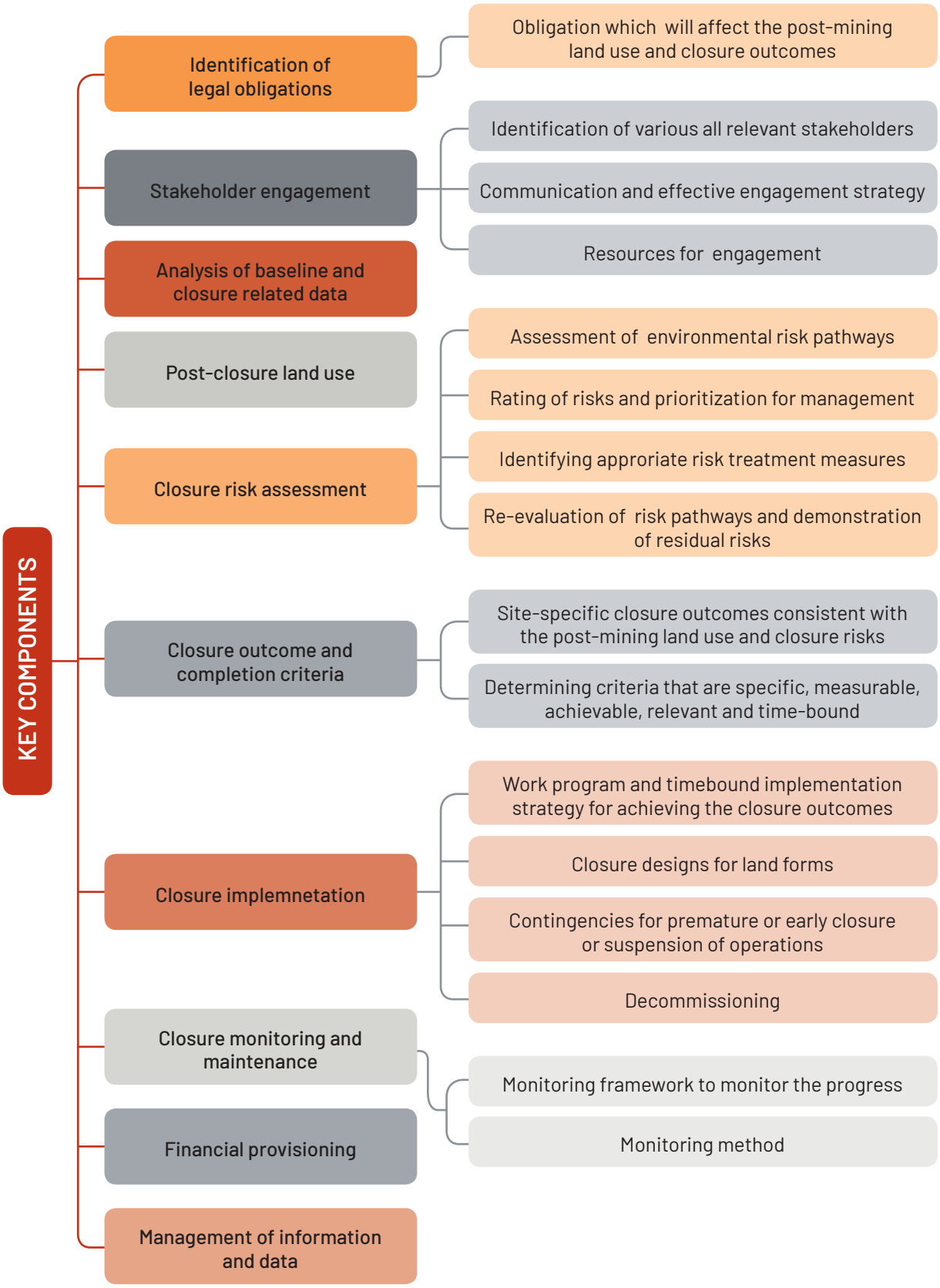
Western Australia

Mine closure related obligations in most Australian jurisdictions are integral to the approval and permits that are obtained by companies pursuant to the environment, planning and mining-related laws. Besides, laws pertaining to issues like contamination, protection of flora and fauna, controlled waste management and land management, etc. also guide closure practices.[29]

In recent years, some jurisdictions in Australia have started considering reforming their mine closure frameworks to ensure comprehensive closure practices that are both environmentally and socially responsible. The overall objective is to prevent or minimise adverse long-term environmental, physical, social and economic impacts of mining activities in the regions, and create a 'stable landform' suitable for post-closure land use, that is agreeable for the local community.[30]

One of the most comprehensive set of guidelines has been developed by the Government of Western Australia under the country's Mining Act (1978).[31] The guidelines cover several environmental, social and economic components as part of mine closure.[32] The key components of the mine closure plan, and what they should include are outlined in Figure 1.

Figure 1: Components of mine closure plan of Government of Western Australia



2.3 Closure frameworks proposed by international agencies

International agencies such as the International Council on Mining and Metals (ICMM), have also outlined integrated closure frameworks *(See box: Integrated mine closure plan)*. The 'Integrated Mine Closure: Good Practice Guide' (2019), outlines a plan for closing legacy mine sites, existing mines, as well as new mines. As per the plan, closure and post-closure activities pertaining to a mine need to be realised through a comprehensive process of planning, designing and implementation measures, in consultation with relevant authorities and stakeholders. The financial provisions for closure are related to dealing with environmental and social aspects of closure *(See box: Integrated mine closure plan of ICMM)*.

The integrated mine closure framework of ICMM outlines financial provisions for closure as related to both environmental and social aspects

INTEGRATED MINE CLOSURE PLAN OF ICMM

The integrated mine closure planning approach as outlined by the ICMM emphasises on three key issues for ensuring comprehensive closure practices and effective closure outcomes. These include integrating mine closure planning mechanisms throughout the mine life, engagement of stakeholders in closure plan development through multiple mechanisms, and having in place a proper governance system to guide closure. The key elements with respect to these are summarised below.

Integration of closure measures in mine planning: Mine closure practices should be integrated into the mine business plan for the entire life of the mine. An ideal integrated mine closure should have the scope of stakeholder involvement and community consultation throughout the mining life cycle.

Creation of knowledge base: The knowledge base is the repository for information that is required to be developed throughout the life of the mine, and regularly updated and reviewed. The information is usually site-specific, and typically covers four aspects — physical, environmental, socio-economic, and the regulatory landscape.

Closure vision, principles and objectives: These components should be defined early in the closure planning process and refined throughout the life of the mine with inputs from stakeholders and as per the knowledge base. Development of vision, principles and objective for closure, in a consultative manner, is important for achieving a fair social transition. Inputs for closure objectives may include company policies and guidelines, resources and timing, site constraints/ achievability (including physical, technical, environmental, workforce-related issues), socio-economic context, impacts and risks, international guidelines and regulatory requirements, and stakeholder inputs and community vision.

Determining post-closure land use: A well-defined post-closure land use is important for carrying out closure-related activities. Such land use may be identified by using the knowledge base, considering land capability and mapping the potential land use options, involving stakeholders, considering beneficial uses, considering the applicable legislative framework, and identifying and addressing failure mechanisms.

Engagement for closure plan development: Effective mine closure planning and implementation should consider the views and opinions of various stakeholders for ensuing closure outcomes that benefit the community. Stakeholders may include mine workers, the local community, indigenous groups, government agencies and regulators, industry, members of the civil society, academia and media.

Identifying and assessing risks and opportunities: A formal identification and evaluation of risks and opportunities must be carried out to select the types of closure activities to be taken up. Risk is assessed from the perspective of laws and regulations, health and safety, environment, social bearing, finances and reputation.

Undertaking closure activities: Specific closure activities need to be undertaken during progressive and final closures. The activities are guided by environmental risk assessments, stakeholder inputs, chemical and physical assessments, engineering designs, assessment of trade-off, cost analyses (including life-cycle cost analysis), resistance to climate change, regulatory commitments (such as those made during the environmental impact assessment process), standard industry practices, residual resourcing opportunities, and the prospective value of remaining assets (land, water rights, infrastructure).

Progressive closure: Progressive closure is extremely crucial for a mine closure. Some of the most common progressive closure works include soil management, in-pit dumping, strategic placement of uneconomic materials, diversion of unimpacted waters, revegetation, stabilisation works, cover placement, demolition of infrastructure that is not needed, improvements to water management infrastructure.

Determining success criteria: It is important to know whether closure activities are being successful or not. A combination of specific, measurable, achievable, relevant and timely approach is required to develop and assess success criteria of the closure activities.

Social transition: One of the most critical issues related to mine closure is ensuring a socio-economic transition post-closure. Investments and actions necessary to support a social transition may be determined through a shared vision of a post-mining future. Some of the costs associated with social transition include costs associated with updating the knowledge base, (such as, social and health impact assessments, community sensitivity analysis, economic diversification studies); costs associated with operational or corporate aspects of the mine (such as, employee training or reskilling programmes, staff and contractor redundancy costs, advisory boards and fund management costs, communication costs, etc.); and costs associated with the implementation of social transition measures. (such as, stakeholder engagement and grievance management, social investment, relocation costs, final land use and infrastructure costs to meet community or government vision, post-closure monitoring, measurement and reporting).

Determining closure costs: The most important aspect of a mine closure is estimating the amount of money required for a successful and sustainable mine closure. These vary from site-to-site and case-to-case.

Developing a closure execution plan: Development of a closure execution plan enlisting specific actions to be carried out during the mine life for the purpose of closure planning and implementation of closure activities.

Monitoring, maintenance and management: It is imperative to monitor, maintain and manage the mine site post closure. Monitoring must be conducted to determine whether specific pre-set targets have been met, and to obtain baseline information to populate the closure knowledge base.

Relinquishment: Relinquishment is a stated objective for many mine sites and refers to the official mine closure as per regulatory requirements. Mine owner has to engage closely with the regulators for relinquishment.

One of the most critical issues related to mine closure is ensuring a socio-economic transition post-closure, for which investments are necessary

Temporary or sudden closure: A mine may close temporarily or suddenly due to financial pressures (market conditions), environmental incidents (floods, earthquakes, force majeure), social incidents (major health epidemics or civil action), regulatory authority actions or changes or structural failures (tailings facility failures, open pit slope failures). Therefore, at each stage of the mine life, there should be an understanding of how such sudden closures can be handled, with periodic review of strategies.

Closure governance: A dedicated governance mechanism is necessary to guide closure. There are two important components to this — company policies or standards for closure to establish expectations, roles and responsibilities, and a closure committee to coordinate the closure planning process and its integration into operational planning.

Source: International Council on Mining and Metals. (2019). Integrated Mine Closure. Good Practice Guide, 2nd Edition

Overall, the laws and regulatory frameworks outlining coal mine closure mechanisms, and the responsibilities of authorities post-closure vary considerably among countries. However, as noted by most scholarly studies, the focus remains primarily on physical and environmental aspects related to the reclamation and rehabilitation of mining land. Consideration of the socio-economic impacts of closure, and a comprehensive regulatory framework to address it is absent. In fact, global experience suggests that to ensure a responsible coal transition, various countries need to strengthen their regulatory framework and associated mechanisms of mine closure in the immediate future.

Various scholarly studies have noted that the focus of mine closure laws is primarily on the physical and environmental aspects, and do not address the socio-economic impacts of closure

Chapter 3

COAL CONTEXT OF INDIA AND LEGAL IMPERATIVES

3.1 Context of India's coal sector and coal regions

A deliberation on coal mine closure in India and the regulatory issues that need attention requires an understanding of the key factors that characterise the country's coal sector and the coal regions. Considering the scope of the report, four specific issues remain the most salient. These include — the nature of mining operations, labour distribution, socio-economic context and environmental challenges, including with respect to land degradation and forestland diversion.

Overall, the CIL, a public sector undertaking, along with its seven subsidiaries, account for nearly 80% of India's coal production

3.1.1 Mine operations

India has nearly 250 years of commercial coal mining history. It started in 1774 by M/s Sumner and Heatly of the East India Company in the Raniganj coalfield. Post-independence, the coal economy has largely been shaped by national priorities of using the resources for meeting the country's energy demand and supporting industrial growth. For systemic development of the coal industry for such purposes, it has been highly regulated, with high reliance on the public sector.

The first major step towards systemic development of the coal industry is considered to be the establishment of the Government of India (GoI) undertaking, the National Coal Development Corporation (NCDC) in 1956, with the collieries being owned by the railways. The same year, the Singareni Collieries Company Limited (SCCL), which was operational since 1945, also became a government company under the aegis of the Government of Andhra Pradesh. In the early 1970s, the coal mining sector was nationalised to ramp up production to meet the increasing demand. Unscientific mining practices and poor labour policies of the private companies were also cited as reasons for nationalisation.[33] Thus, in 1973, the Coal Mines (Nationalisation) Act (CMN Act) was enacted, and in 1975, Coal India Limited (CIL), the public sector undertaking (PSU), was established. Today, the company is the largest coal PSU in the world.

In 1993, the CMN Act was amended to allow private parties into the coal mining business for captive purposes only. Over time, the engagement of the private sector in the coal industry increased as PSUs engaged them as mine development operators (MDOs) and as contractors in various other coal mining-related activities. In 2018, the central government allowed commercial coal mining by private players.[34]

Overall, the CIL along with its seven subsidiaries, account for nearly 80% of India's total coal production. In 2021-2022, the country produced nearly 778 MMT of coal, of which about 623 MMT was from CIL and its subsidiaries.[35] The rest of the production comes from the SCCL, the NLC India Limited (involved in lignite mining) and the captive coal mines operated by public and private companies. With private companies now procuring coal blocks for commercial mining, the share of private companies in India's coal production will increase in the coming years.

For coal mine closures, therefore, the status of land available with the PSUs, including their rehabilitation and scope of repurposing, and transition of the workers engaged formally and informally in coal mining operations and related activities, will be a key consideration.

3.1.2 Labour distribution

The coal mining sector in India primarily involves three kinds of workers — permanent or departmental workers, contractual workers, and informal workers (including unorganised and gig workers). The worker categories are derived as per their terms of engagement in

Chinmayi Shalya, iFOREST

coal mining and related activities and as defined under the respective labour laws and by the Labour Bureau of India *(See box: Worker categories in the coal mining sector).*

As per data obtained from the coal PSUs and also the captive mine owners, it can be estimated that currently about 0.36 million people are employed formally in coal mines across India. While there are no estimates of the informal workers, district-level studies of coal workers in India's top coal mining states — Jharkhand (Ramgarh district),[36] Chhattisgarh (Korba district)[37] and Odisha (Angul district)[38] — suggests that the proportion of informal workers, on an average, is nearly 1.5-2 times the formal workers. In many old coal districts, there are a large number of people who earn a living by gathering and selling coal and are a part of the informal coal economy.[39]

In fact, the coal mining sector is dominated by contractual and informal workers. As the district-level studies show, nearly 70-80% of the coal workers collectively account for these categories.

Table 4: Distribution of coal mining workers in Korba and Angul districts

Category of workers	Korba	Angul
Departmental workers	11,936	10,673
Contractual workers	6,449	9,858
Informal workers	23,399	33,271
Total	**41,784**	**53,802**

Source: District worker assessment, iFOREST, 2022

District-level studies of coal workers in India's top coal states suggests that the proportion of informal workers, on an average, is nearly 1.5-2 times the formal workers

The proportion is expected to increase further in the coming years owing to two reasons. First, there has been a steady decline in hiring departmental employees by the coal companies. Between 2000 and 2014, formal employment declined by about 1.8% per year in CIL.[40] In 2021, the company further announced that it will reduce its manpower by 5% every year for the next 5 to 10 years to reduce expenses, while also planning to close unviable mines.[41]

Secondly, there is an increasing engagement of mine development operators (MDOs) and contractors in the coal sector. This is now further being facilitated by engaging workers through 'fixed term contracts', which the GoI has allowed for all industrial sectors

since 2018 by amending the Industrial Employment (Standing Orders) Act, 1946 and various provisions towards the Industrial Employment (Standing Orders) Central Rules, 1946.[42]

Therefore, ensuring rights and security of the contractual and informal workers remain a key consideration for coal mine closures in the coming decades.

Nearly 70-80% of the coal mining workforce are contractual and informal workers

CATEGORIES OF WORKERS IN THE COAL MINING SECTOR

The coal mining sector involves primarily three categories of workers. Based on their terms of engagement, they are defined as follows.

Permanent or departmental workers: As per the Industrial Employment (Standing Orders) Central Rules, 1946, workers who have been engaged on a permanent basis, are appointed for an unlimited period, and/or who have satisfactorily put in three months' continuous service in a permanent post as probationers are permanent workers. Every permanent worker is supposed to be provided with a departmental ticket. In a coal PSU, departmental employees are typically of two broad categories — executive and non-executive. Among the non-executive ones, the workers are further categorised as monthly-rated, weekly-rated, or piece-rated.

The permanent employees are entitled to various social security benefits as provided by the coal companies such as pension, employee provident fund (EPF), healthcare, housing (in some cases), etc.

Contractual worker: The Contract Labour (Regulation and Abolition) Act, 1970 defines that a workman shall be considered as 'contract labour' in an establishment, or in connection with the work of an establishment when such workman is hired by/through a contractor, with or without the knowledge of the principal employer.

For coal mining, the contractual workers have a defined contract provided by the employer. They are also entitled to EPF and pension benefits under provisions of the Mines Provident Fund and Miscellaneous Provisions Act, 1948.

The new Occupational Safety, Health and Working Conditions Code (OSH Code), 2020, has further extended the interpretation of contractual workers, and has provided an exclusion criteria. It says that workers who are regularly employed by the contractor for any activity of his establishment and their employment is governed by mutually-accepted standards of the conditions of employment (including engagement on permanent basis), and get periodical increment in the pay, social security coverage and other welfare benefits in accordance with the law for the time being in force in such employment, shall not be considered as contractual worker.

However, it is to be noted that the rights of a contractual worker employed/engaged by a contractor who has very small operation is disputable. They are often rendered as informal or casual workers. This is because, the provisions of the OSH code are only applicable to a contractor(s) "who employs, or who employed on any day of the preceding twelve months 50 or more workmen".

Informal worker: As per the National Commission for Enterprises in the Unorganised Sector (NCEUS) and the Labour Bureau of India, informal workers include those who do not have employment security or social security provided by the employer. The informal workers can be part of both the formal coal mining sector, as well as the informal coal economy (which involves coal gatherers and sellers).

The informal workers in the coal regions are typically daily wagers and gig workers who are primarily engaged in temporary work related to loading and unloading, coal levelling, maintenance work, and other casual work. These workers participate in a work arrangement, and earn from such activities, outside of traditional employer-employee relationship.

3.1.3 Socio-economic context

Low income and deprivation of people in many coal districts in India add to the challenge of the ability of the local community to adapt to any unplanned closure of coal mines and economic transition.

Overall, in many top coal districts, there is a high proportion of low-income people, particularly in the rural areas. On an average, the highest earning member of about 85-90% of rural households earns below ₹10,000 (US$125) per month.[43] Many of these people are also engaged in casual labour work in the coal sector.[44]

In fact, a particular challenge exists with the low-income levels of informal workers involved in coal mining-related activities. While the permanent and contractual workers directly engaged by the company (collectively the formal workers) have some of the best-paying jobs in the coal districts, there is a huge income disparity when it comes to informal workers. District-level assessments in the country's two top coal districts — Korba (Chhattisgarh) and Angul (Odisha) — exhibit this. For example, in Korba, which is currently India's largest coal-producing district, over 44% of informal workers have a monthly income below ₹10,000.[45] Similarly, in Angul, which is currently the third-largest coal-producing district and a hub of coal-based industries, over 45% of the informal workers earn below ₹10,000 per month.[46]

Not only do a large number of coal workers have low income, their capacity to respond to sudden income loss is further undermined by the lack of social protection. Also, there is an overall deprivation of people with respect to access to basic amenities and resources in the coal districts. Many of the top coal districts concentrated in the states of Jharkhand, Odisha, Chhattisgarh, West Bengal, and Madhya Pradesh (which collectively account for 85% of the total resources in the country),[47] have a high proportion of people who are multi-dimensionally poor.[48] As government records show, on an average, more than 40% of people in these districts are multi-dimensionally poor, having poor status of healthcare, education and living standards. This is much higher than India's average of 25%.[49]

3.1.4 Environmental challenges

With respect to the environmental context, most of India's top coal districts are highly polluted. For example, the union environment ministry in 2010 identified most of the top coal mining areas as critically polluted areas (CPAs) having serious problems of air, water and soil pollution. These include Hazaribagh and Dhanbad areas in Jharkhand, Korba in Chhattisgarh, Angul and Talcher areas of Odisha, Singrauli of Madhya Pradesh, among others. Besides mining, related industrial activities, such as coal washeries, thermal power plants, coke ovens and soft coke plants have been identified by the Central Pollution Control Board (CPCB) as the key contributors to the severe pollution of air, water and soil in these regions.[50]

Most of the top coal mining areas have been identified as critically and severely polluted areas by the Central Pollution Control Board

Most mining areas also have a serious problem of ground and surface water pollution resulting from mining and other industrial activities. Water sources get polluted by surface run-off from the collieries and the poorly managed overburden dumps. Besides, India's distinct problem of abandoned mines, particularly in old coal mining areas, is a major source of groundwater pollution. These mines lead to leakage of highly toxic acid in the ground water. Such factors have direct implications for public health.[51]

Apart from pollution, mining activities put serious stress on natural resources, such as forest resources. Coal mining remains one of the major activities leading to forestland diversion (nearly 20-25% of total forestland diversion is due to mining), affecting forest-based livelihoods, a major source of earnings of marginalised communities. As per review of clearances, it can be estimated that nearly 0.1 million hectares of forestland has been diverted by coal companies considering currently operational and temporarily closed mines.[52]

3.2 Legal review

Considering the realities of India's coal regions, four factors remain most important to ensure environmentally and socially responsible mine closures. These include:

- Environmental issues;
- Land aspects, including land transfer and repurposing;
- Financial issues; and,
- Labour aspects.

There are various laws and regulations related to these issues, that are also associated with coal mine closure. The following sections analyse the current laws and regulations, and practices in this context.

3.2.1 Environmental issues

Coal mining has large-scale environmental impacts, including pollution of air, water and soil, waste generation, diversion and degradation of forestland, and land subsidence, among others.

Considering this, mining activities are guided by various regulatory provisions to minimise the impacts, not only while mining is ongoing, but also to ensure mines are closed in an environmentally responsible manner, and the coal mine land is reclaimed to its original condition as far as possible.

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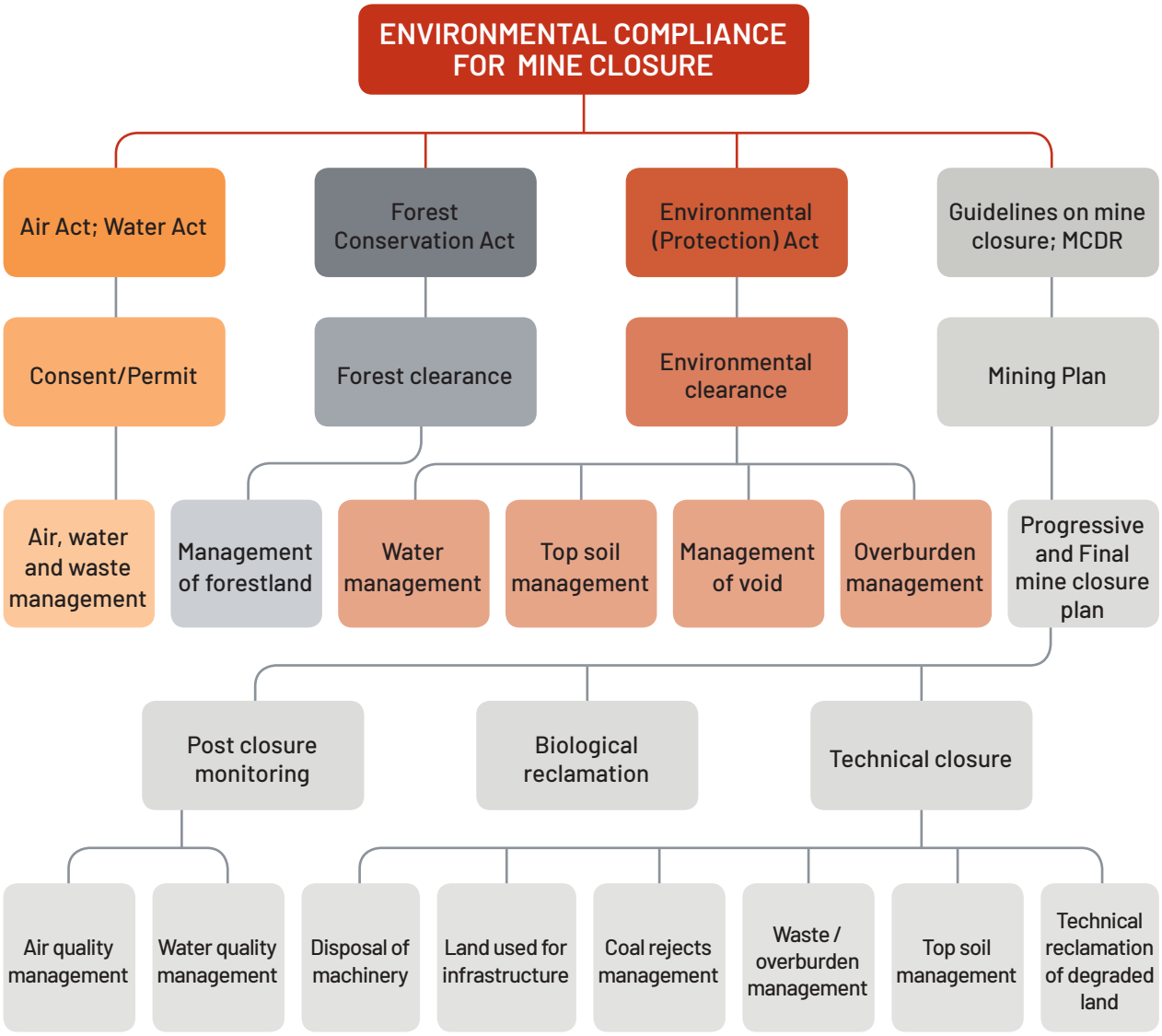
Godhar Coal Mine is affected by the underground fire in Jharia, Dhanbad, India

Coal mine closure and fulfilment of environmental obligations by the mining companies is guided by regulatory provisions specified under four key documents. These include:

i. Coal mine closure guidelines;
ii. Provisions of environmental clearance letters- special conditions;
iii. Provisions of forest clearance letters; and,
iv. Consent to operate.

The environment-related conditions as specified in each of these are outlined in Figure 2.

Figure 2: Environmental regulations and provisions related to coal mine closure



Coal mine closure guidelines

The *'Guidelines for Preparation, Formulation, Submission, Processing, Scrutiny, Approval and Revision of Mining Plan for the Coal and Lignite Blocks'* require mining companies to prepare a mine closure plan, specifying aspects of progressive and final mine closure, for all operational mines.[53]

The mine closure guidelines were first promulgated just 13 years back, in 2009, by the Ministry of Coal. Prior to that, there was no systematic procedure outlined for the closure of mines. As the government acknowledged, the "Indian coal sector is relatively new to the

concept of systematic mine closure".[54] However, considering India's coal mining history of nearly 150 years,[55] this leaves many mines which have been poorly regulated over the years.

The government has recognised the problem. Therefore, the guidelines required "all coal mine owners, who are operating coal mines without the approval of any Mine Closure Plan (MCP)" to obtain one, as per the provisions of the guideline.[56]

The mine closure guidelines have been modified four times (in 2012, 2013, 2019 and the latest in May 2020) since their promulgation in 2009. The modifications have been done primarily on two aspects — the method of developing the mine closure plans (which now include components of both progressive and final closure), and the amount that should be deposited as surety money towards mine closure costs.

The MCPs are considered to be the base document to ensure that mines are closed giving due consideration to environmental management aspects, as well as biological reclamation of mined land. The plan includes various environmental parameters to ensure scientific mine closure. These include aspects of land degradation, air pollution, water pollution, soil management, waste management, etc. The plans are developed by accredited Mining Plan Preparing Agencies (MPPA).[57]

The MCP is designed in a manner to ensure scientific mine management practices throughout the operational life of the mines. A plan, therefore, has two components — the Progressive Mine Closure Plan (PMCP) and the Final Mine Closure Plan (FMCP).[58]

A PMCP includes various land-use activities to be done continuously and sequentially during the entire period of the mining operations. These include technical reclamation, topsoil management, land stabilisation , biological reclamation, etc., as outlined in Figure 2. The plan is prepared for a period of every five years from the beginning of the mining operations. These plans are periodically examined every five years and subjected to third-party monitoring by the agencies approved by the Central Government like the Central Mine Planning and Design Institute (CMPDI), the National Environmental Engineering Research Institute (NEERI), the Indian Institute of Technology (IIT-ISM) or any other institutes/organisations/agencies specified from time to time.[59]

The final mine closure activities start toward the end of the mine life. As the guidelines specify, the activities can continue even after the reserves are exhausted and/or mining is discontinued till the mining area is restored to an acceptable level. However, to ensure time-bound action with respect to the final closure activities, the guidelines stipulate two specific timeframes considering the quantum of closure activities to be undertaken. For underground mines and opencast mines having stripping ratio of less than 6mm^3/te, a three-year time period has been specified for the completion of all closure activities; for mines with stripping ratio of more than 6mm^3/te, a five-year time period has been specified.[60]

The closure guidelines also stipulate conditions for post closure monitoring. A three-year monitoring period has been specified with respect to air and water quality management. However, there remains a lack of clarify on who will monitor these conditions and how the data management will happen.

The Indian coal sector is relatively new to the concept of systematic mine closure as the first set of guidelines were promulgated in 2009, while the country has a 250-year of commercial coal mining history

Environmental clearance conditions

The environmental management and compliance obligations of a mining company are built in as a component of their ongoing mining practices. The conditions for environmental management are largely considered as stipulated in the environmental clearance (EC) and forest clearance (FC) letters pertaining to a mine, which are issued under the Environmental Protection Act (1986), and the Forest Conservation Act (1980), respectively. Environmental conditions pertaining to mine closure are part of the 'Specific Conditions' as specified in the EC letters. These include conditions related to overburden (OB) handling, filling up of mine void with OB, topsoil management, etc.[61]

As per state environmental authorities, the specific conditions related to factors of final mine closure, as stipulated in the EC letters, are difficult to monitor for compliance considering the long duration of the mining projects, as well as the capacity of authorities. The compliance of these activities is monitored through the half-yearly compliance reports which are prepared by the project proponents.[62]

As per the information of officials of the Coal Controllers Organisation , the periodic environmental monitoring and compliance reports concerning mining activities, as verified by the concerned authorities, constitute the basis of assessing compliance. There is no separate report that is to be prepared for closure purposes on this account.

Forest clearance conditions

The FC letters pertaining to coal projects specify the status and management of forest land, that is considered for diversion for undertaking mining activities. The conditions specify that the 'legal status of the forest land shall remain unchanged'. The government has further specified that the period of diversion of the forestland shall be co-terminus with the mine lease period.[63] Both these conditions considered together underscore the fact that the forest land shall be handed over to the forest department once mines are closed.

The conditions, therefore, mean that if any new activity that has to be taken up in a land area classified as forest land, which was earlier with a mining company, a fresh FC need to be obtained from the concerned authority following the due process as stipulated under the FC Act (1980), and rules and guidelines developed under it.

Conditions under consent orders

Besides MCPs, ECs and FCs, conditions of mine management are also stipulated in the consent orders, particularly under Consent to Operate (CTO), as given by the State Pollution Control Boards (SPCBs). While there is no specification of conditions related to mine closure in the consent orders, the environmental compliance reports prepared by the mining companies in furtherance of the consent, constitute the basis for understanding the environmental condition of a mining area at the time of the closure.

However, there remains vagueness on the role of the SPCBs in post-closure monitoring of air and water quality. While the closure guidelines mention the requirement to monitor air and water quality for a period of three years after mines are closed, the concerned authority responsible for undertaking such monitoring and management of environment-related data has not been specified. As per officials of the SPCBs in key coal mining states, the issue requires further clarification.

The conditions for environmental management of mines are stipulated in the environmental and forest clearance conditions, and the mine closure plans

Overall, it can be concluded that environmental compliance issues are largely dealt with as part of the environmental management practices when mining operations are ongoing. This includes compliance of conditions under the EC, FC, and Consent orders, as well as undertaking measures as part of mines management and progressive closure. The compliance issues are reviewed by the SPCB, the regional offices of the MoEF&CC, and the CMPDI. Therefore, from a company perspective, there arises no difficulty for closing a mine complying with environmental conditions, if mining activities are carried out in compliance with the stipulated conditions under these permits and plans throughout the mine life.

However, the closure guidelines do not specify any provision of 'environmental risk assessment', which is now considered a key component of closure planning. Assessing environmental risk pathways is also important for planning and undertaking comprehensive environmental remediation measures. There also exists vagueness with respect to environmental monitoring post closure, and reporting on it.

3.2.2 Land issues

Land-related issues constitute a major factor for coal mine closure. Coal mining is an extractive activity and involves acquisition and diversion of vast stretches of land for mining and mining-related activities. In India, about 0.4 million hectares of land area is available with operational and temporarily closed coal mines. Of this, at least 0.13 million hectares (34%) is with unprofitable coal mines. Out of this, about one-fourth is forestland area.

Besides, there are at least 293 abandoned coal mines in India (as per the official estimates of 2021, which is a conservative estimation)[64], occupying substantial land area (no land estimate available for abandoned mines). Land area under coal mines is further going to increase in the coming years, with new coal blocks being auctioned.

For ensuring mine closure under the principles of just transition, a key aspect will be land reclamation and repurposing. Besides environmental benefits, repurposing of mining land will be crucial to ensuring maximum socio-economic benefits for the local community.

There are two determining factors for evaluating the scope of repurposing of coal mining land. These include:

- The suitability of existing regulatory provisions; and,
- The ownership and status of land and transferability, which has bearing on surrendering land available with mining companies for repurposing and investments.

The limitations with respect to both of these are discussed below.

Table 5: Land with unprofitable mines

State	Land (in hectare)
Chhattisgarh	33,322
Jharkhand	30,410
Odisha	4,071
Madhya Pradesh	17,978
Maharashtra	15,013
West Bengal	36,490
Total	**137,284**

Source: As per latest environment clearance letters of coal mines

Suitability of regulatory provisions to allow repurposing

With respect to suitability of regulatory provisions, as discussed earlier, the 'guidelines for coal mine closure' have provisions for land reclamation, which is focussed on biological reclamation only.[65] However, the closure guidelines are not designed to support land repurposing. This is particularly because of the following reasons.

As per the closure guidelines and an analysis of approvals that are granted to (operational) coal mines in India, it is evident that they still allow:

- External OB dumps to exist outside the pit, reaching a height of 30 metres to 90 metres. The regulations state that these OB dumps are to be stabilised with slopes not exceeding 28 degrees and covered with topsoil and vegetation by the mining operator as a part of technical reclamation in both progressive and final closure operations.
- Internal OB dumps to exist inside the pit with a height of 30 metres to 90 metres as well. The internal dumps, like the external ones, are to be stabilised and covered with topsoil and vegetation. In some cases, the top portions of external and internal dumps are merged.

There are at least 293 abandoned coal mines in India covering vast stretches of valuable land in the coal districts

- A void of significant area and depth to remain in the quarry area that is not occupied by internal OB dumps. This void is allowed to filled with water.

An assessment of post-mine land use of coal mines in the Ramgarh district of Jharkhand exemplifies the limitations with the closure guidelines and post-closure land use planning. The assessment of post-closure land use plans of 10 opencast mines in the district suggests that about 58% of the mine lease area is identified for keeping as backfilled excavation area, external OB dump, and voids. Such mine closure plans undermine the scope of repurposing the land for productive economic use.

Table 6: Post closure land use of opencast mines in Ramgarh

Mine	Total land area (ha)	Excavation area (ha)	Water body (ha)	External overburden dump (ha)	Safety zone and green belt (ha)	Undisturbed (ha)	Infrastructure (ha)
Burkhunda	848.3	164.8	31.9	177	30.3	424.3	20
Jharkhand OCP	261.9	77.7	44.92	34	13.2	81.1	11
Karma	244.5	29.8	42.8	69.5	40.5	39.9	22
Kedla	1,084.5	521.1	139.5	21.41	71	278.3	53.2
Parej East	346	149.4	43.4	34.9	69.6		48.7
Pundi	851.5	734.4			4	15	98.1
Rajrappa	2,264	437.7	389.1	247.2	793.2		396.8
Sirka	277.1	147	7.24		97.1		25.8
Tapin	304	150	7	91.3	45.6		10.1
Topa	577	184	81.1	82.2	180.8		49
Total	**7,058.8**	**2,595.9**	**786.9**	**757.5**	**1,345.3**	**838.6**	**734.6**

Source: iFOREST analysis based on post closure land use plans of various mines; Blank spaces indicate no area identified for corresponding land use

Overall, it can be inferred that the closure guidelines only attempt to minimise the land under overburdened dumps, and maximise internal dumping and backfilling, without specifying the standards to which these activities need to be executed. Although a reduction in the land area under external OB dumps is desirable, the change in topography due to the permissible height of the external dumps and internal dumps over the ground level make it extremely difficult to repurpose the land for other economic activities post-mining.

In order to maximise the area that can be repurposed, extreme surface undulations need to be minimised

In order to maximise the area that can be repurposed, extreme surface undulations need to be minimised. This involves removing the external dumps, and parts of internal dumps lying above the ground level, and putting into the void in order to gain more flat land that can be repurposed.

Ownership status of land and transferability

The other determining factor for land repurposing is the ownership status of coal mining land once mines are closed. This is a crucial factor for determining how leasing and selling of land can happen for investments/various economic usage for the future.

Since coal is considered a national asset and a resource for 'public purpose', regulations pertaining to acquiring and using land for coal mining is distinguished from many other industrial land-use. The most important regulation in this respect is the Coal

Bearing Areas (Acquisition and Development) Act, 1957 (CBA). The law has allowed public sector companies, the CIL and its subsidiaries, to acquire substantial stretches of land for prospecting and mining purposes. The CBA was enacted to ensure greater public control over the coal mining industry. As mentioned in the preamble of the Act:

"An Act to establish in the economic interest of India greater public control over the coal mining industry and its development by providing for the acquisition by the State of unworked land containing or likely to contain coal deposits or of rights in or over such land, for the extinguishment or modification of such rights accruing by virtue of any agreement, lease, licence or otherwise, and for matters connected therewith".[66]

Besides, the Land Acquisition Act, 1984 (which in 2013 was replaced by the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 or the LARR Act), complementing the spirit of the CBA, has been used for acquiring land for other purposes, such as for developing infrastructure, townships, etc.

The CBA Act (as amended till December 1976), while outlining the provisions for acquiring land for mining, and for granting of mining leases (read along with the Mineral Concession Rules, 1960), remained ambiguous about what happens to the coal mining land once mines are closed. Such ambiguity arises from two particular factors:

- The duration of the mine-lease period; and,
- The ownership status of the land once mines are closed.

Provisions under Sections 11 and 12 of the CBA Act are particularly important in this regard.

Section 11 of the CBA Act outlines the 'Power of Central Government to direct vesting of land or rights in a Government company'. Section 11(2) specifies that *"Where the rights under any mining lease acquired under this Act vest in a Government company under sub- section (1), the Government company shall, on and from the date of such vesting, be deemed to have become the lessee of the State Government as if a mining lease under the Mineral Concession Rules had been granted by the State Government to the Government company, the period thereof being the entire period for which such a lease could have been granted by the State Government under those rules; and all the rights and liabilities of the Central Government in relation to the lease or the land covered by it shall, on and from the date of such vesting, be deemed to have become the rights and liabilities of the Government company".*

The reading of Section 11, has led to the interpretation that coal mining leases are granted to PSUs in 'perpetuity' for the lifetime of the mine, as also clarified by officials of the PSUs and the CMPDI.

A new notification of the central government, issued in October 2021, has now provided specifications on the duration of mining leases — a period of 50 years— as granted to coal companies.

As specified in the notification issued by the Ministry of Coal (October 1, 2021), *"All mining leases granted on or after the commencement of the Mineral Concession (Amendment) Rules, 2021 to a Government company or corporation for coal or lignite shall be for a period of fifty years"* [Para 3(1)]. For subsisting coal or lignite mining leases that had been granted to a government company or corporation before commencement of the Mineral Concession (Amendment) Rules, 2021, the notification specifies that such leases should be *"deemed to have been granted for fifty years or till 31st March 2030, whichever is later"* [Para 3(2)]. For leases not granted through auction,[67] a 20-year extension period, however, has been allowed on conditional basis. The notification specifies that, the *"State Government, upon an application made to it in this behalf by the Government company or corporation at least three months prior to the expiry of the mining lease, shall extend the period of the mining lease for a further period of twenty years at a time"* [Para 3(3)].[68]

The Coal Bearing Areas Act remain ambiguous about what happens to the coal mining land once mines are closed

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The October notification as issued by the Ministry of Coal, essentially reinstates the provisions of the MMDR Amendment Act 2015, which had allowed mining leases to be granted for a period of 50 years (Section 8).[69]

The second ambiguity is with respect to the ownership status of the land once the mines are closed. Section 12 of the CBA Act specifies that *"The competent authority may, by notice in writing, require any person in possession of any land acquired under this Act to surrender or deliver possession of the land within such period as may be specified in the notice, and if a person refuses or fails to comply with any such notice, the competent authority may enter upon and take possession of the land"*.

While the provision mentions surrendering of the mining land, or delivering of possession, however, coal PSUs remain unclear about the execution of it. No clear guideline has also been developed on how the land should be surrendered, the officials informed. In the absence of these, after mining is over, the land continues to be in possession of the coal companies, and no land has been 'surrendered' or handed over to the government so far.[70]

Due to the absence of guidelines on surrendering the mining land after mining is over, the land continues to be in possession of the coal companies

The coal mine closure guidelines as developed by the Ministry of Coal also sustained such ambiguity. For example, the guidelines of 2013, mentioned that *"after the closure of the mine, the reclaimed leasehold area and any structure thereon, which is not to be utilised by the mine owner, shall be surrendered to the State Government concerned following a laid down procedure as in vogue at that point of time"*. The guidelines also make it clear that there is a lack of clear procedure for surrendering the land (Para 10).[71]

However, the closure guidelines, as amended in December 2019, and the Ministry of Coal Notification of October 2021, now provide some specificity on the need for returning the land.

The coal mine closure guidelines (as amended till May 2020) specify that the mine owner is required to obtain a final mine closure certificate from the Coal Controller after undertaking reclamation and rehabilitation work, and all final mine closure activities, *"for surrendering the reclaimed land to the state government."* (Para 2.17).[72] The Ministry of Coal notification (2021) pertaining to the 50-year lease period, also indicate that since a coal mining land is 'leased' for a 'defined' period, once the lease period is over, the mining land is deemed to be returned to the government.

However, as per interviews conducted with the coal PSUs and the CMPDI officials, there remains a lack of clarity regarding what will be the procedure now for surrendering all that land that is available with coal companies from years of mining. Officials of the coal PSUs still consider that the land remains with the coal industry.

Besides, there also remains a concern about the use of the forest land that is part of the mine lease area. The status of such land is governed by the FC Act, 1980 and Rules developed under it.[73]

As per the FC Act, read along with the FC Rules, 2003,[74] *"The Regional Office of the MoEF&CC shall regularly monitor the status of compliance to conditions stipulated in approvals accorded under the FC Act for diversion of forest land falling in mining leases to ensure that the user agencies comply with all the conditions before the land falling in such leases is surrendered to the concerned State Government/Union Territories on expiry of the mining lease"*. As per the provision, therefore, if a coal mining activity has involved forest land, the land will be surrendered to the State/Union Territory, as the case may be, on the expiry of the mining lease.

Overall, a reading of the mine closure guidelines, the notification issued by the Ministry of Coal in October 2021, and provisions of the forest conservation laws, render that land for coal mining is given as a 'lease' to the mining companies. Upon completion of the lease period, the forest land shall be surrendered as forest land. For non-forest land, the land should to be returned to the state government. However, there exists a lack of clarity on the process of such surrendering the land. There is also no provision for mine land repurposing under any regulatory provision.

Considering the lack of clarity under the CBA Act on 'surrendering of coal mining land', and recognising that large tracts of land where mining activity has ceased are lying idle with coal companies, the Ministry of Coal in April 2022, promulgated a set of policy guidelines, to allow the leasing and use of land acquired under the CBA for certain purposes.[75]

The latest policy guidelines specify that land acquired under the CBA Act, that is 'no longer suitable or economically viable for coal mining activities, or land from which coal has been mined out/de-coaled and such land has been reclaimed', can be leased by the PSU owning the land currently, to 'other CPSUs, state governments (including its PSUs), and private entities, for development of coal and energy infrastructure, and undertaking certain other development activities.[76] *(See box: Infrastructure development activities permitted in land acquired through CBA Act).*

However, the latest guidelines as promulgated for the use of coal mining land can lead to two major challenges. First, it undermines (and can potentially preclude) the scope of repurposing of coal mining land to support social transition in a manner that also creates livelihood and income opportunities for the local community. For the prescribed activities, since land can be given for at least 30 years now (and also 99-year leases for railways, roads, compensatory afforestation, etc.), any other economic planning in the land therefore will not be possible.

Secondly, the guidelines limit the scope of participation of the local community and concerned stakeholders for the post-closure land use planning. However, the participation of the local community has been underscored as a key factor for the development of 'closure vision', implementing actions of a successful closure, and ensuring community benefits, by international experts and agencies.[77]

Therefore, while the current guidelines draw attention to a key issue that a huge amount of mining land is remaining as unproductive land with the coal companies, it needs a re-look from the perspective of ensuring a social transition, as huge amount of land will potentially become available for repurposing, including for community use, as coal mines close down.

Recognising that large tracts of land where mining activity has ceased are lying idle with coal companies, the Ministry of Coal in April 2022 promulgated a set of policy guidelines specifying certain activities that can be undertaken in such land

INFRASTRUCTURE DEVELOPMENT ACTIVITIES PERMITTED IN LAND ACQUIRED THROUGH CBA ACT

On April 13, 2022, the Union Cabinet chaired by the Prime Minister of India gave a nod to a set of policy guidelines developed by the Ministry of Coal to allow certain coal and energy infrastructure development activities, and other related work, in land acquired under the Coal Bearing Areas (Acquisition and Development) Act. The guidelines came into effect in April 22.

The guidelines have been developed to make use of the land that is lying idle with the coal PSUs within the leased areas. This includes land where coal mining is not economically viable, or the areas which have been de-coaled and reclaimed. The PSU, that is currently holding the land, can lease it to other central PSUs, state government agencies and PSUs and other private entities for certain activities for a defined period. The Board of the PSU has been designated as the 'competent authority' to approve all land lease proposals. The CMPDI will verify the suitability of the land for leasing.

The type of work which has been allowed under the guidelines include:

- Setting up coal washeries (maximum lease period 30 years).
- Setting up conveyor systems (maximum lease period 30 years).
- Setting up coal handling plants (maximum lease period 30 years).
- Constructing railway sidings (maximum lease period 30 years).
- Rehabilitation and resettlement of project affected families due to acquisition of land under the CBA Act or other land acquisition law (maximum lease period 99 years).
- Setting up thermal power and renewable energy projects (maximum lease period 35 years).
- Setting up or providing for coal development related infrastructure- project office (maximum lease period 30 years); hospital (maximum lease period 99 years).
- Compensatory afforestation projects (maximum lease period 99 years).
- Provide Right of Way- railway lines and highways (maximum lease period 99 years); other infrastructure (maximum lease period 30 years).
- Coal gasification and coal to chemical plants (maximum lease period 35 years).
- Coalbed methane (maximum lease period 30 years, or as may be allowed by the government to the coalbed methane concession holder).
- Other energy related infrastructure (no time specification given).

Source: Ministry of Coal. Office Memorandum dated April 22, 2022.Policy guidelines for use of land acquired under the Coal Bearing Areas (Acquisition and Development) Act, 1957

The financial liability of mining companies for closing a coal mine is related to the costs associated with undertaking progressive and final mine closure activities

3.2.3 Financial aspects

The financial liability of mining companies for closing a coal mine is related to the costs associated with undertaking progressive and final mine closure activities as per the closure plan. The mine closure 'Guidelines for Preparation, Formulation, Submission, Processing, Scrutiny, Approval and Revision of Mining Plan for the Coal and Lignite Blocks' (as amended till May 2020), outlines the components and costs of mine closure.

Overall, the cost of mine closure is estimated to be ₹0.9 million (US$ 11,250) per hectare for opencast mines, and ₹0.15 million (US$ 1,875) per hectare for underground mines, at

current prices. The costs are subject to escalation based on wholesale price index for future estimations. These costs are taken as universal costs for closure of opencast and underground mines respectively.[78]

The components that are currently considered for determining the closure costs include the following components as outlined in Table 5.

Table 7: Mine closure activities for which financial obligation is considered

Category	Overall description of activities	Activities under progressive closure	Activities under final closure
Technical reclamation*	• Rehandling or backfilling of external OB dumps, dozing, and grading the waste rock "broken overburden" back into the pit to minimise the left-out void. • Construction of toe walls and garland drains around dumps, voids and water bodies. • Separate stacking and maintenance of topsoil.	• Technical reclamation of mined out land and OB dumps. • Filling of void through rehandling of crown dump.	• Filling of void. • OB rehandling for backfilling. • Construction of peripheral roads, gates, viewpoint, cemented steps on bank. • Construction of toe walls and garland drains around dumps, voids, and water bodies.
Biological reclamation	• Layering the topsoil back onto reclaimed land area for plantation. • Plantation of suitable species on the reclaimed area, backfilled pit and any remaining external dump. • Plantation over designated areas – safety zones, green belts, vacant undisturbed lands earmarked for plantation.	• Topsoil management. • Plantation over virgin area including green belt. • Plantation on mined out land and OB dumps.	• Top soil management. • Topsoil landscaping. • Plantation. • Development of agricultural land (where applicable).
Subsidence management (for underground operations), safety and security	• Remediation of excessive subsidence on surface above caved out/ depillared mining areas. • Securing the mining area to avoid any eventualities by barbed wire fencing or construction of concrete or gabion walls. • Sealing of inclines, shafts, and other portals in case of underground mines.	• Barbed wire fencing around dump and pit. • Construction of toe wall around the dump. • Construction of garland drains.	• Subsidence monitoring for five years. • Barbed wire fencing around dump and pit. • Construction of toe wall around the dump. • Construction of concrete wall with masonry pillar around the pit and water body. • Construction of garland drains. • Securing air shaft and installation of borewell pump. • Securing incline (underground mines). • Stabilising by benching of side walls of the water body.

The closure costs currently include technical and biological reclamation, subsidence management, safety and security, demolition and dismantling, environmental monitoring and limited worker support

Category	Overall description of activities	Activities under progressive closure	Activities under final closure
Demolition and dismantling	• Cost of either reuse of the existing infrastructure developed by the mining operator or demolition of the same. Also includes decommissioning and dismantling of any remaining plants and operational support structures and machinery.		• Dismantling of workshops, pumps, pipes, and other fixtures. • Dismantling of stowing bunker, provisioning of pumps for borewell pumping arrangement (in underground mines). • Dismantling of underground mining equipment. • Rehabilitation of dismantled facilities. • Dismantling of power lines.
Environmental monitoring, management and supervision	• Monitoring and management costs of environmental parameters of air, water and noise for a period of three years post closure.	• Water quality, air quality and waste management.	• Post mining air and water quality management for three years. • Waste management. • Manpower cost of supervision.
Worker support	• Entrepreneurship development of affected people, retrenchment benefits, and continuation of services such as schools, hospitals, etc.		• Entrepreneurship development (vocational/ skill training for sustainable income of affected people). • Golden handshake / retrenchment benefits to 100 employees of opencast mine, and 200 employees of underground mine. • One-time financial grant to societies and institutions which are dependent upon the project. • Provide jobs in other mines of the company. • Continuation of other services like running of schools, etc.

*Technical reclamation is to be carried out to leave the mine pit topographically as close as possible to the pre-mining state

A uniform cost rate is not suitable as different regions in India have site/area-specific challenges with respect to mine closure considering the geological characteristic, issues of environmental remediation, etc.

As evident from the closure cost components, the costs of mine closure primarily take into account technical closure costs and those associated with biological reclamation. However, these estimates are presumed to be grossly inadequate, considering the following key reasons.

i. Cost rates are based on standard unit costs: The cost rates are based on a standard/ universal unit cost (which is per hectare of land), and are not site-specific. As noted earlier, this is estimated as be ₹0.9 million per hectare for opencast mines, and ₹0.15 million per hectare for underground mines. However, different mining regions in India have site/area-specific challenges with respect to mine closure considering the geological characteristic of the region, issues of environmental remediation, etc. The universal unit cost, therefore, may not be representative of the same.

ii. Costs do not reflect the closure aspects of legacy and abandoned mines: The cost rates do not differentiate between new mines and legacy mines, many of which have been operational for a long time before the mine closure guidelines came into effect in 2009. These mines will have a significant land area under external dumps, poor mine reclamation, poor soil and water management practices, etc.[79] The mine closure plans of these mines, outline plan for slope reduction and plantation on external OB dumps and prioritisation of backfilling of waste rock generated 2009 onwards.[80] Similarly for underground mines, subsidence management has only become a key aspect post-2009.

Therefore, the actual costs associated with their closure will be much higher than what is estimated. For example, in Ramgarh of Jharkhand, where there have been no new mines post 2009 (and over 50% of mines are currently temporarily closed), the actual cost of closure is estimated as ₹48.8 billion (US$ 610 million), as compared to the escrow amount of ₹8.3 billion (US$ 104 million), which is about six times the escrow corpus. The costs are further higher for abandoned mines, which have been closed without any guidelines.

iii. Repurposing costs are not considered: The costs associated with development of the mining land for repurposing is not accounted for, which is a key consideration for mine closure to allow future economic activities and investments.

iv. Extremely limited provision of worker issues and other social costs: There is only a very limited mention of 'golden handshake /retrenchment benefits' to mine workers, which are related to the departmental workers only, as evident from the numbers. As specified, for opencast mines, up to 100 employees are only eligible for this, and for underground mines 200 employees will be eligible. The provisions have also been integrated only in 2019, when the guidelines were amended.

However, there are no provisions for contractual and informal workers, who comprise major share of the workforce. Besides, no social costs associated with closure are also reflected, such as, welfare of local communities impacted by closure, who have indirect dependence on mining-related activities.

The cost rates for mine closure do not differentiate between new and legacy mines, while the latter have been operational for a long time before the mine closure guidelines came into effect in 2009

3.2.4 Labour issues

Ensuring labour rights remains a central issue towards transitioning to a low-carbon economy.[81] Much emphasis has been laid on evoking the provisions of labour laws and human rights laws in the event of the closure of mines and energy infrastructure.[82] Labour groups, such as the International Labour Organization (ILO),[83] the International Trade Union Confederation (ITUC),[84] the European Trade Union Confederation (ETUC)[85], and other union bodies in various countries, have been strongly advocating for strengthening regulations to uphold labour rights as the transition happens.

In India, since labour falls under the Concurrent List of the Constitution of India, therefore, labour laws can be enacted by both the Parliament of India and state legislatures. Over the years, around 100 state laws and 40 central laws have been enacted.[86] However, it had been observed by the Government of India (GoI), that existing multiplicity in these laws had hindered implementation measures and availing of worker's rights. In 2020, the GoI undertook reform measures to amalgamate 29 laws into four Codes, to simplify the regulatory provisions, and ease implementation. The four codes that were enacted into an Act by the Parliament include, the Wage Code (amalgamating four laws), the Social Security Code (amalgamating nine laws), the Occupational Safety, Health and Working Conditions Code (amalgamating 13 laws), and the Industrial Relations Code (amalgamating three laws).[87]

With respect to coal mine closure and subsequent considerations of labour supportthe essential laws that come into play are the Industrial Disputes Act, 1947 (ID Act), the

Contract Labour (Regulation and Abolition Act) of 1970, the Coal India Limited (CIL) Standing Orders as developed under provisions of the Industrial Employment (Standing Orders) Act (1946), and various laws pertaining to social security. These laws have now been subsumed under three specific labour Codes, that were enacted as Acts in 2020. These include:

- The Industrial Relations Code, 2020, which subsumes the Industrial Dispute (ID) Act, 1947, and the Industrial Employment (Standing Orders) Act, 1946;
- The Occupational Safety, Health and Working Conditions Code, 2020, which subsumes the Contract Labour (Regulation and Abolition) Act, 1970; and,
- The Social Security Code, 2020, which subsumes various social security related laws.

The rules subsequent to each of the Codes are currently in the process of being finalised by the central and the state governments, as per government information. Considering that these Codes will be guiding the process of a just transition of the coal workers in the coming years, the following section evaluates the legal aspects of labour transition in light of the Codes, and the Acts they have subsumed.

Besides, there are specific regulations developed for the coal workers that are important for evaluating aspects of labour rights and their security in the event of mine closure. These include:

- The Coal India Limited Standing Orders (as developed under the Industrial Development (Standing Orders) Act, 1946); and,
- The Coal Mines Provident Fund and Miscellaneous Provisions Act, 1948.

The application of these laws and their scope for ensuring workers' protection are also discussed below.

Retrenchment of workers does not include voluntary retirement, termination on non-renewal of contract, and termination of services due to completion of tenure or on the ground of continued ill-health

Industrial Relations Code, 2020

The Industrial Relations (IR) Code (2020), was passed by the Parliament as an Act to consolidate and amend the *"laws relating to Trade Unions, conditions of employment in industrial establishment or undertaking, investigation and settlement of industrial disputes and for matters connected therewith or incidental thereto"*.[88]

As mentioned above, two of the most relevant Acts that have been integrated in the Code are the Industrial Dispute (ID) Act, 1947, and the Industrial Employment (Standing Orders) Act, 1946. The ID Act specifies preconditions for lay-offs and retrenchment.[89] The Industrial Employment (Standing Orders) Act on the other hand require employers in industrial establishments to formally define conditions of employment under them and submit (draft) standing orders to certifying Authority for its Certification.[90] Under this Act, various industrial establishments have developed their standing orders, including CIL.

The IR Code, under Chapters IX and X now provides specifications for lay-off, retrenchment and compensations. *(See box: Defining lay-off and retrenchment of workers). Considering the average workforce of a coal mine (both underground and opencast operations), the conditions for lay-off and retrenchment have been considered as per the provisions stipulated in Chapter X, which pertain to industrial facilities with 300 or more workers. As per the assessment of coal mine workers, on an average the existing unprofitable mines have at least 350 (and above) workers engaged formally.*

DEFINING LAY-OFF AND RETRENCHMENT OF WORKERS

Lay-off: Lay-off means the failure, refusal, or inability of an employer to give employment to a worker whose name is borne on the muster rolls of his industrial establishment and who has not been retrenched. The inability may arise on account of various reasons affecting the industrial operations, including, shortage of coal, power or raw materials, accumulation of stocks, the break-down of machinery, natural calamities or for any other connected reason.

Retrenchment: Retrenchment means the termination of service of a worker by the employer for any reason whatsoever, otherwise as a punishment inflicted by way of disciplinary action.

However, retrenchment does not include voluntary retirement of the worker, retirement of the worker on reaching the age of superannuation, termination of the service of the worker as a result of the non-renewal of the contract of employment between the employer and the worker concerned on its expiry or of such contract being terminated under a stipulation in that behalf contained therein, termination of service of the worker as a result of completion of tenure of fixed term employment, or termination of the service of a worker on the ground of continued ill-health.

Source: Industrial Relations Code, 2020

The appropriate government holds the power to approve or reject the application for lay-off and retrenchment after hearing both the employer and the workers

Conditions for lay-off: With respect to conditions for 'lay-off' (Section 78), the law stipulates that no worker (other than a *badli*/substitute worker or a casual worker) whose name is borne on the muster rolls of an industrial establishment can be laid-off by his employer except with the prior permission of the appropriate government, through a duly made application.

A lay-off without a notice is only permitted if it is "due to fire, flood, excess of inflammable gas or explosion" in a mine [Section 78(1)]. However, if a worker has been laid-off without a prior permission in such exceptional cases, the employer is required to file an application within a period of 30 days from the date of commencement of such lay-off, to the appropriate Government for permission to continue the lay-off [Section 78(3)].

The law further stipulates that if an application for permission has been made, the appropriate government, will grant or refuse the decision of lay-off, only after an enquiry on genuineness and adequacy of the reasons for such lay-off, and as it thinks fit after giving a reasonable opportunity of being heard to the employer, the workers concerned and the persons interested in such lay-off, may.

Conditions for retrenchment: With respect to conditions of retrenchment (Section 79), the law specifies, any worker employed in such industrial establishment, who has been in continuous service for at least one year under an employer, can be retrenched after giving a *"three months' notice in writing indicating the reasons for retrenchment and the period of notice has expired, or the worker has been paid in lieu of such notice, wages for the period of the notice"* [Section 79(1)].

However, as with the case of lay-off, a prior permission needs to be obtained from the appropriate government, or such authority as specified by that government, by making an application and citing reasons for retrenchment. The government holds the power to approve or reject the application for retrenchment, after hearing both the employer and the workers, and being satisfied about the genuineness and adequacy of the reasons stated by the employer, the interests of the workers and all other relevant factors. In cases, where the government does not communicate the order granting or refusing to grant permission to the employer within a period of 60 days from the date on which such application is made, the permission applied for shall be deemed to have been granted on

the expiration of the said period of 60 days, and the application shall be deemed to have been disposed of accordingly by the appropriate government.

The law also includes the provision of developing a "worker reskilling fund" to provide training to the retrenched workers (Chapter XI). The fund will be made up of the following contributions:

- Employer contribution, as an amount equal to fifteen days wages last drawn by the worker immediately before the retrenchment, or such other number of days as may be notified by the central government, for every retrenched worker; and,
- Contributions from other sources as prescribed by the appropriate government (for coal mining the central government).

The fund must be used to pay the last 15 days of wages last drawn by the worker, to his account, within 45 days after the worker's retrenchment.

Compensation: As lay-off compensation, employers are required to give to every worker who has completed at least one year of continuous service:

- 50% of basic wages and dearness allowance if he is laid off, and
- One month's notice (or equivalent wages) and 15 days' wages for every year of continuous service for such a period to a worker who has been retrenched.

The Code also provides for the constitution of a negotiating union in an industrial establishment having registered trade unions for negotiating with the employer.

While the IR Code retains many of the provisions of the ID Act, the worker compensation as noted is Code has been revised. As per the ID Act, the compensation specified is equivalent to 15 days' average pay for every completed year of continuous service or any part over six months. The provision of a reskilling fund, as introduced in the Code is also important.

While the IR Code (and erstwhile the ID Act), ensures that workers are given a due notice period during events of lay-offs and retrenchments, and such actions cannot be unilateral decision of the industrial establishment, there are two particular limitations with respect to workers security.

First, a three-month notice period will be too short a time for retrenchment of workers in the event of mine closures, for proper worker rehabilitation. Secondly, the conditions of retrenchment under the Code are not applicable to casual (and temporary replacement workers), which constitute a large proportion of coal workers. Therefore, as per its current standing, the law remains favourable for the industrial establishment or the employer to retrench workers with very little difficulty during closures.

Under the OSH Code, there is no liability for the principal employer or the contractor to provide any compensation, transition support, alternate means of employment, or skilling assistance to the workers

Occupational Safety, Health and Working Conditions Code, 2020

The Occupational Safety, Health and Working Conditions Code, 2020 (OSH Code), particularly holds significance with respect to working conditions and other benefits as applicable for the contractual workers, as well as the migrant workers. The Code subsumes the Contract Labour (Regulation and Abolition) Act, 1970, and the Inter-state Migrant Workers Act, 1979.[91]

Considering the increasing proportion of contractual workers in the coal mining sector, and the high proportion of migrant workers involved in mining-related activities (including coal transport), the law remains pertinent for security and benefits that may be provided for such workers.

However, there are some key limitations with the Code considering issues of comprehensive coverage of contractual workers and ensuring worker protection in the event of mine closures. In fact, the Code suffers from the same limitations that

are present in the Contract Labour Act with respect to providing compensation and transition support to the contractual workers.

First, the law only covers contractors, and workers supplied by individual contractors, who have fairly big operations. As specified under Chapter XI, the provisions are applicable for every establishment in which 50 or more contract labour are employed or were employed on any day of the preceding 12 months through contract, and every 'manpower supply contractor' who has employed, on any day of the preceding 12 months, 50 or more contract labour [Section 45(1)]. Therefore, it potentially leaves out various contractors and their workers who have small scale operations, and supply labour as need arises.

Secondly, it does not have any provision for providing worker security in the event of closure of a mine or industrial establishment. There is no liability for the principal employer or the contractor to provide any compensation, transition support, alternate means of employment, or skilling assistance to the workers.

The Social Security Code empowers the central and state government to create a Social Security Fund for providing security and welfare benefits to the unorganised and gig workers

Social Security Code, 2020

The Social Security Code, 2020 amends and consolidates nine laws related to social security with the goal to extend social security to all employees and workers either in the organised or unorganised or any other sectors.[92]

With respect to the coal mining sector, the law holds most significance for the unorganised[93] or informal workers (including migrant and gig workers). These workers are engaged in various activities without the typical employee-employer relationship and have ad hoc terms of engagement. They are also not covered by the various regulatory provisions related to workers welfare, including specific regulation(s) related to the coal mining sector workers, such as the Coal Mines Provident Fund and Miscellaneous Provisions Act (1948), under which the departmental employees and contractual workers are entitled to Employee Provident Fund, pension, healthcare, and other social benefits. *(See Section on Coal Mines Provident Fund and Miscellaneous Provisions Act, 1948).*

There are four particularly important provisions that the Code now has for such workers:

- Formulation and notification of welfare schemes by the central and the state government(s) for providing social security benefits to unorganised workers;
- Development of a Social Security Fund;
- Development of Social Security Boards at the national and state levels; and,
- Establishment of 'career centres' for worker's support.

The Code mentions that the central government and respective state governments shall formulate and notify various welfare schemes to support unorganised workers (Chapter X). The measures for which such schemes shall be formulated by the central and state governments respectively [Section 109(1)] is outlined in Table 6.

Table 8: Social security for unorganised sector workers through government schemes

Welfare schemes by central government	Welfare schemes by state government
• Life and disability coverage • Health and maternity benefits • Old age protection • Education • Any other benefits as may be determined by the government	• Provident fund • Employment injury benefit • Housing • Educational schemes for children • Skill upgradation of workers • Old age homes • Funeral assistance

To avail the social security benefits as provided under various government schemes, every unorganised worker shall need to be registered [Section 113. (1)]. The workers will be eligible for such registration if she/he has completed 16 years of age (or such age as may be prescribed by the Central Government) and has submitted a self-declaration (electronically or otherwise in such form) in a manner prescribed by the central government.

Besides the provision for schemes, the Code empowers the central government to create a "Social Security Fund" for providing social security and welfare benefits to the informal workers (unorganised and gig workers). The state governments have also been empowered to create a Social Security Fund for the welfare of the unorganised workers [Sections 141(1) and 141(5)]. The sources of the fund will be the money available for the various welfare schemes for such workers.

To ensure benefits for the workers, the law also provides for the establishment of a 'National Social Security Board for Unorganised Workers' chaired by the Union Minister for Labour and Employment (Section 6), and a state-level 'Unorganised Workers' Social Security Board' chaired by the Minister of Labour and Employment of the concerned state government (Section 9).

Finally, the Code also provides for the establishment of Career Centres (Chapter XIII) for workers which can be important for providing career support to workers during transition. The centres which will not only collect and furnish information relating to employers and persons seeking employment, but also provide vocational guidance, career counselling and guidance for self-employment [Section 2(9)]. Under the Code, most of the establishments would have to notify their job vacancies to career centres (Section 139). An Aadhaar card is required to avail the facilities offered by the Career Centre (Section 141).

The Coal Mines Provident Fund and Miscellaneous Provisions Act, 1948

The Coal Mines Provident Fund and Miscellaneous Provisions Act (1948) is the centre-piece law with respect to ensuring social security and retirement benefits for "persons employed in coal mines". The law was enacted to develop a Provident Fund Scheme, a Pension Scheme, a Deposit Linked Insurance Scheme, and a Bonus Scheme for such persons.[94]

The contract workers of the coal mines while eligible for a pension, in reality do not avail it, because they usually do not complete a 10-year period of employment with one company

The Act is applicable to all 'employees' employed for any kind of waged work (manual or otherwise) in or in connection with a coal mine, and who gets his wages directly or indirectly from the employer. The Act also includes those employed by the contractor for a mine [Section 2(d)].[95]

While all the schemes as developed under the Act provide social security to workers during their tenure of employment, the 'Coal Mines Pension Scheme' has particular significance for ensuring employee benefits in the event of closure/post-closure.

The Pension Scheme outlines the provision for "superannuation pension, retirement pension, or permanent total disablement pension to the persons employed in any coal mine". Besides it also has provisions for widow or widower pension, children pension or orphan pension and life assurance benefits, payable to the beneficiaries of coal employees".

However, to become eligible for a monthly pension under the Scheme, a coal employee/worker must complete a minimum 10 years of pensionable service. In cases where an employee does not complete 10 years of service on attaining the age of superannuation, leaves the service, his services are terminated, or becomes disabled before completion of 10 years of service, the person is provided only an amount which is "payable by way of return of contribution to such employee".[96]

As per inputs of officials and labour unions, the contractual workers of the coal mines while eligible for a pension, in reality do not avail it, because they usually do not complete

a 10-year period of employment with one company. In fact, the pension record of the CIL suggests that there is a negligible claim made for pension by contractual workers till date.

The Coal India Limited Standing Orders

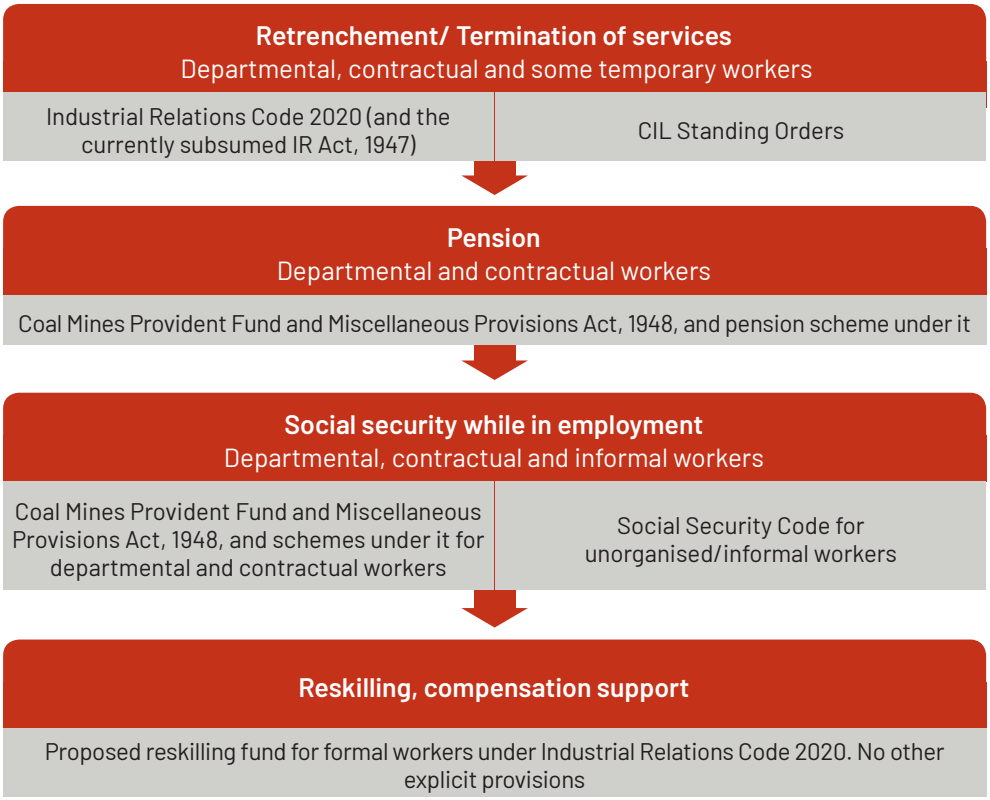
The Coal India Limited Standing Orders, as developed under provisions of the Industrial Employment (Standing Orders) Act (1946),[97] provides specifications on 'termination of employment by the company'.

As per Order 24, three specific conditions are stipulated to termination of services of permanent and temporary workers:

- For a "permanent workman having less than one year of continuous service", a one-month notice in writing with reasons or wages in lieu thereof shall be given" (unless the termination relates to misconduct, in case of which no notice will be given);
- Subject to the provisions of the ID Act, 1947 no notice of termination of employment is necessary in the case of temporary workers. The only instance, where a temporary worker will be given a two-week notice is if the worker has completed three months of work, and if the cause of termination is different from that mentioned in the contract.
- For monthly paid workers, a one-month notice period, and for weekly paid workers, as two-week notice period has been stipulated. However, for these workers, the employer can relax the condition and may pay cash in lieu of such notice,

Overall, it is the personal liability of the Manager of the industrial establishment to enforce the provisions of the Standing Order, unless he is overruled by his superior.

Figure 3: Regulations for coal workers



The overall evaluation of regulatory provisions pertaining to coal mine workers suggests that there are differential challenges with respect to worker issues in the event of coal mine closure.

While permanent employees of the coal PSUs have decent worker protection, no obligation to ensure rights and welfare of informal coal workers exist with the companies or the contractors

With respect to the permanent or departmental employees of the PSUs, they are well protected under the labour laws. As per observations of the union leaders, since the coal mining sector is a large government undertaking, therefore, in the event of a coal mine closure, the interests of permanent or regular workers must be well protected. While the law mentions the three months' notice period, for the coal PSUs, the permission of the government or the concerned authority will be a key issue. The labour unions will also play a key role in such retrenchment decisions.

The compensations and benefits of the permanent workers can also be negotiated by evoking provisions of the Standing Orders of the CIL. The permanent employees, who have completed the years of pensionable employment are also eligible for lifelong pension.

For the contractual workers, while there are regulatory safeguards during their tenure of employment, the possibility of negotiation by the union on their behalf are unclear. The major share of contractual workers remains non-unionised. Therefore, their services can be terminated with short notice period.

There is no regulatory provision to safeguard the interests of the informal workers (casual labourers) who are directly dependent on coal. No liability has been established for any employer or contactor, even though they will be the worst impacted by mine closures. Besides, the informal workers being unorganised, do not also have the power to negotiate through the labour unions.

While the labour laws seemingly may allow retrenchment or termination of services of various workers, particularly the contractual workers; however, unplanned closure without proper worker transition measures will lead to local protests and alienation. *(See box: Legal dispute following abrupt decision on closure of Chotia mines in Korba, Chhattisgarh).*

Legal disputes and labour unrest in all likelihood will arise if mines are closed abruptly without a plan for a just transition and providing proper transition support to the workers

LEGAL DISPUTE FOLLOWING ABRUPT DECISION ON CLOSURE OF CHOTIA MINES IN KORBA, CHHATTISGARH

The underground mines of Chotia lie in the rural Poundi Uproda block of Korba, India's top coal producing district. The mines, currently under BALCO, were originally allocated to Prakash Industries Private Limited in 2003 for the supply of coal to its integrated steel plant in the neighbouring Janjgir Champa district. Nearly a decade later, the allotment of the coal mine was cancelled by the Supreme Court while pronouncing the judgment on the infamous coal scam, observing irregularities in mine lease allocation. In 2015, following institutionalisation of auction mechanism for awarding mines, BALCO obtained the Chotia mines for captive use to meet the coal requirement for its 600MW thermal power plant (TPP) located in Korba. As per the Rehabilitation and Resettlement Policy, BALCO appointed the land oustees (who were earlier with Prakash Industries) as "general majdoor" (casual workers), or provided direct employment with the company on the basis of their educational qualification.

Six hundred and seventy-three employees/workers were working at Chotia during its operational years. The company had directly employed 154 people out of the 673. About 121 of them were locals who were given jobs in lieu of their land. These workers were trained for jobs such as dumper operations, driving, cleaning, etc. Nearly 400 workers were brought in from Jharkhand to work at Chotia as the mining operations were outsourced to a Dhanbad- based company named Dhansar Engineering Works.

In December 2019, the company, however, stopped the mining operations citing reasons of high cost of coal production and economic viability to continue with the

operations. As per the information obtained by the Chhattisgarh Mineral Resources Department, the coal mine was auctioned to BALCO for ₹3,025 (about US$ 38) per tonne production, during the first rounds of auction when the bids went high. Over the years, the bids for similar blocks have nearly halved to ₹1,400 (US$ 17.5) on an average. Currently, the company is sourcing coal from Gevra and Kusmunda mines, which are more economical.

For the workers, a circular was issued on October 1, 2020 where BALCO stated that the coal industry was facing financial crisis since September 2019 and the Covid-19 pandemic had exacerbated the situation. Due to these reasons, the company decided to cease the payment of monthly allowances of all the employees working at Chotia mines. Subsequent to this circular, another circular was issued by BALCO known as the "Voluntary Retirement Scheme of Balco Chotia Coal Mines Division".

However, the offer of the Voluntary Retirement Scheme (VRS) did not go down with many of the workers. After initial protests and demand for opening the mine, the workers moved Court in 2021. In April 2021, a Writ Petition *(Chandra Bhushan Jaiswal & Ors. Vs. State of Chhattisgarh & Ors.)* was filed in the High Court of Chhattisgarh by the labourers employed by BALCO, primarily the *"general mazdoors"*, who allegedly were forced to take voluntary retirement. The group of petitioners included workers aged between early twenties and late forties. The petitioners complained that the granting of the VRS to them was "arbitrary, illegal and contrary to the law applicable to the facts and circumstances of the case". The company coerced the workers to take VRS as the employees were threatened to be shifted to other states if they refused to submit their VRS applications. The act of the company was also a violation of Article 14, 16 and 21 of the Constitution of India, which ensures Equality before the law, Equality of opportunity in matters of public employment, and the Right to protection of life and personal liberty, respectively.

The petitioners were also particularly resistant to the transfer citing their low-income status and mobility issues. As per the affidavits submitted by the workers, their monthly salary on an average was about ₹20,000. The workers considered that with such income it will be difficult to survive in a new place, far off from their home state.

Observing the context and issues raised, the Court held that the entire record of BALCO with regard to the voluntary retirement of the petitioners were to be summoned. The Court quashed the order passed by BALCO on October 31, 2020 by which the VRS applications of employees were accepted. The company was directed to treat the petitioners as employees in service from October 31,2020 till the final disposal of the writ petition.

As per the information gathered from the company and the workers on March 2022, the court case has been withdrawn as the workers who moved Court were given employment at the BALCO captive power plant in the Korba district.

The case of BALCO brings out the challenges faced by workers if the closure decision is abrupt and is not communicated to the workers on time, leaving no scope for mutual discussions. It underscores the need for a consultative process involving the workers and concerned stakeholders, for the closure of mines and ensuring a just transition, If these practices are not instituted, agitations and litigations are likely to happen, which will not only create challenges for the company, but will significantly delay the transition process.

Sources:
1. Ministry of Environment, Forest and Climate Change. (2018). Environment Clearance of Chotia 1 and Chotia II coal mines.
2. Writ Petition No. 2482 of 2021. (2021, April). Chandra Bhushan Jaiswal & Ors. Vs. State of Chhattisgarh & Ors.

There is lack of synergy between the language of the CBA Act, and subsequent notifications and guidelines issued by the government on leasing of coal mining land and surrendering of the same post closure

3.3 Overall limitations in laws and regulatory mechanisms

The review of the regulatory obligations for coal mine closure suggests that there are major limitations in the laws, as well as regulatory guidelines, to ensure mine closures in an environmentally and socially responsible manner to ensure a just transition. The key issues are elaborated below.

i. Limitations in the land-related laws and guidelines issued under them undermines the scope of repurposing of mine land repurposing post closure

To begin with, a major challenge exists with surrendering mining land post closure, and scope of land repurposing. The key issues with respect to these include:

- There is no clear guideline in place for surrendering land to the government once mines are closed, while the Ministry of Coal Notification (October, 2021), and the coal mine closure guidelines make it clear that the land is 'leased' for a defined period and must be surrendered to the state government upon closure.
- There is also a lack of synergy between the language of the CBA Act, the subsequent notifications and policy guidelines issued by the government with respect to leasing of land for coal mining and surrendering the same once mines are closed, which has led to confusion in the status of post mine land transfer and land use.
- The mine closure guidelines that are in place are not designed to allow repurposing of land, which is a key consideration.
- Since the forest land acquired for mining purposes must be returned to the forest department post closure, for any economic/industrial activity to happen in such reclaimed land in future, fresh FC should be obtained by the concerned entity. Considering the process and duration of obtaining a clearance, a repurposing activity in such land can take years to commence.
- There is no closure guideline for abandoned mines, while the closure of these mines and reuse of the mining land is going to be a significant issue, and a major opportunity to plan for a social transition.
- The closure guidelines do not have any provision to support a social transition, which is considered to be a key factor of mine closure planning in global best practice frameworks.

ii. Inadequate financial resources for environmentally and socially responsible closure

There are no guidelines for the closure of abandoned mines and mine land repurposing

A closely related matter to the closure practices is the financial obligations associated with mine closure. With respect to this the key challenges are:

- The costs of coal mine closure as estimated in the escrow, are grossly inadequate, particularly considering mines management practices of old/legacy opencast mines, and underground mines (such as land subsidence, fires, etc.). If fact, these are the mines which are going to be closed in large numbers in the coming 10-15 years.
- The costs estimated against OB removal, backfilling, land subsidence, etc., do not consider case-specific issues, separately for old and new mines.
- The costs do not account for any social transition.

iii. Fragmented approach for environmental management and assessment of post-closure risks

With respect to environmental management and remediation issues, there are two key limitations:

- There is a fragmented approach to environmental management and monitoring. The conditions provided under various permits and plans have duplicities. This also creates confusion on parts of authorities regarding monitoring and data management.
- There is no provision for assessing environmental risk pathways as part of mine closure planning. This is considered an important exercise for the mitigation of future pollution and undertaking environmental remediation measures. In fact, environmental remediation has not been considered as a component of mine closure practice.

There is no provision for assessing environmental risk pathways as part of mine closure planning

iv. Weak security provisions for contractual workers and informal workers

One of the biggest challenges exists with securing the rights of workers in the event of coal mine closure. The existing regulatory provisions under the various labour laws are barely suited to address it. This is particularly considering the nature of workers in India's coal mining sector, and the coal economy at large, which is dominated by informal and contractual workers.

The laws also have limited provisions for providing reskilling support to the workers. Besides, there is no transition support identified for workers when coal mines close, to ensure livelihood security.

Overall, the labour laws need to take into account the current and future labour distribution of the coal mining sector. This requires instituting and strengthening provisions, particularly for contractual and informal workers in the event of the coal transition. The eventualities of early closure decisions should also be considered.

Chapter 4

REFORM FRAMEWORK FOR JUST CLOSURE

Preet Kumar, iFOREST

4.1 Introduction

The issue of coal mine closure in India, like many other countries, is primarily addressed under the environmental and mining laws, and through subordinate legislations, guidelines and processes developed under them. However, considering the muti-faceted issues related to coal mine closures, the current laws and regulatory mechanisms remain inadequate.

Also, the current set of regulations pertaining to aspects of labour is not suited to address the challenges of the time. The laws do not include provisions that can appropriately address the labour issues in the event of coal mine closure, as the provisions for contractual workers are weak, and for informal workers they are completely absent. Similarly, for land, there is a legacy challenge with the transfer of coal mining land and repurposing, as there is a lack of a comprehensive regulatory framework and mechanism to guide this.

Therefore, a comprehensive set of regulatory reform is necessary to guide coal mining closure in the coming years, addressing issues of environmental responsibility, social obligations, and economic development of the coal mining areas.

The Government of India has also started taking account of the problem. In 2021, the Ministry of Coal started deliberating on the formulation of a "robust mine closure framework", with specific emphasis on three major aspects — institutional governance, people and communities, and environmental reclamation and land repurposing. It has also been noted that the framework will be guided by the principles of just transition.[98]

In February 2022, in response to questions in the Upper House (Rajya Sabha) of the Parliament of India, the Minister of Coal and Mines also informed that the Government is planning to use the abandoned coal mining land (including the voids) available with at least 293 abandoned and discontinued mines. These mines have been closed/abandoned/discontinued due to the "depletion of reserves, spontaneous heating, safety reasons, inundation, adverse techno-economic conditions, financial losses, adverse geo-mining conditions, surface constraints, etc."[99] The plan is to develop these mine land areas in an 'eco-friendly' manner, including the development of eco-tourism parks, pisciculture, ground-mounted solar in some of the de-coaled areas, besides regular considerations of afforestation, fly ash filling in voids, etc.[100]

Considering the need for a planned coal transition given the climate crisis, the growing policy and regulatory focus for an environmentally and socio-economically responsible mine closure, and the global best practice frameworks that are in hand (and are further being developed), it is time for India to consider a comprehensive reform agenda to support coal mine closure, including strengthening the laws, developing institutions and capacity of authorities, and improving stakeholder engagement.

The Ministry of Coal has started deliberation on the formulation of a robust mine closure framework, with emphasis on institutional governance, people and communities, and environmental reclamation and land repurposing

4.2 Recommendations for policy and regulatory reforms for just coal transition

To ensure an environmentally and socio-economically responsible closure of coal mines in a time-bound and strategic manner, a set of reform measures need to be considered. The key objective of instituting the reforms should be to:

- Ensure timely transfer of land available with coal mining companies, to maximise opportunities of land repurposing and reuse;
- Maximise repurposing potential of coal mining land;
- Mimise post-closure environmental risks and hazards;

- Ensure labour rights and welfare, and minimise risks of disputes; and,
- Ensure a balanced social transition.

Reforms to address land issues

The following reforms will be necessary to ensure the timely transfer of land available with coal mining companies and maximise repurposing potential.

i. Introducing amendments to the CBA Act (1957), concerning provisions of granting of coal mine lease, the period for which lease is granted, and surrendering of the land once mines are closed. The provisions should also be synergised with the notification as issued by the Ministry of Coal (2021), and the Mineral Concession (Amendment) Rules, 2021, with regard to a 'defined' (50 years) mine lease period.

ii. Development of a comprehensive mine closure framework and revision of the closure guidelines focusing on (but not limited to) the following aspects:
    - Integrating closure vision, principles and objectives of mine closure.
    - Allowing mine closure plans to be designed in a manner to make maximum land available for repurposing.
    - Integrating provisions of social transition, including key investment areas and actions necessary to support it.
    - Strengthening post-closure monitoring and data maintenance.
    - Integrating specific criteria that are measurable, achievable and relevant for determining the progress and success of closure practices.
    - Integrating plan for temporary or sudden closure.
    - Outlining a mechanism of closure governance.

Besides, the abandonment cost needs to be re-evaluated and proposed accordingly, considering mine type, their age, and geo-morphological aspects.

iii. Development of guidelines for land repurposing to:
    - Maximise the socio-economic value of the mining land, and community benefits.
    - Transfer and use of land, classified as 'forest land', within the designated mine lease area.

iv. Developing specific regulations/guidelines for repurposing of abandoned mine land, including the generation of a comprehensive knowledge base.

The CBA Act need to be amended concerning provisions for granting of coal mine leases, the lease period and surrendering of the mining land once mines are closed

Reforms for minimising environmental risks and hazards

Reform of regulatory provisions under the Environmental Protection (EP) Act (1986) should be considered for instituting mechanisms to assess environmental risk pathways, and for undertaking remediation measures before the closure. The following reforms will be necessary to minimise post-closure environmental risks and to undertake environmental remediation activities as necessary.

i. Integration of environmental risk assessment framework/pathways based on periodic monitoring data as available with environmental authorities and regulators.

ii. Assimilating and strengthening the dataset to develop a comprehensive data and knowledge base.

iii. Developing a governance mechanism to have dedicated officials to monitor environmental compliance of mine closure and manage information in a systematic manner.

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Reforms on labour rights and welfare

The following set of reforms will be necessary to strengthen labour security and provide transition support in the event of mine closure.

i. Revisions in the Industrial Relations Code pertaining to three particular aspects:

- Integrating specific provisions for informal or casual workers with respect to their terms of engagement, retrenchment, etc.
- The notice period for the retrenchment of workers needs to be extended from the current three-month period.
- Compensation provisions need to be specified for all types of coal workers, including for informal and contract workers engaged in ad-hoc manner and with low-wages, to support a holistic worker transition.

ii. Revision of the Coal India Limited Standing Orders pertaining to:

- Extension of notice period for termination of services for various grades of workers.
- Integration of provisions of worker transition support, including compensations and skilling and reskilling.
- Transition support for families of workers of low-grade, and/or low income.

iii. Minimising informality in the coal mining sector in the future by hiring workers through fixed-term contracts and at least ensuring regular wages and compensations, and striving to lessen exploitation by contractors.

Overall, the reforms should uphold the spirit of Articles 16 and 21 of the Constitution of India, which ensure Equality of opportunity in matters of public employment, and the Right to protection of life and personal liberty, respectively.

Development of a social transition framework

The development of policies and regulations for just transition is intricately related to implementing societal transition measures that can help to achieve long-term stability and sustainability among the local communities affected by the closures of mines and energy infrastructure.

The following reforms will be necessary to institute a social transition framework:

- Integrate the provision of social transition within the coal mine closure framework.
- Develop and institute a social transition framework aligning with just transition goals. The framework shall include provisions for (but not limited to) community sensitivity assessment during the transition, economic diversification planning, health impact assessments, provisions of skilling and reskilling, communication with local communities, stakeholder engagement and grievance management mechanisms, etc.
- Outline a governance mechanism to implement the social transition measures.

A social transition framework complementing the process of mine closure need to be developed, which should also align with just transition goals

Overall, it can be concluded that considering the challenges of just transition of the unprofitable and end-of-life mines in the coming years, and a strategic phase down of coal mining activities that will be necessary to build a green economy in the next three to four decades, we need to have well-designed laws and regulations. Therefore, it is time for India to consider a comprehensive reform agenda to support coal mine closure, including strengthening the laws, developing institutions and capacity of authorities, and improving stakeholder engagement. The observations and recommendations of the report is intended to support deliberations in this regard.

References and Endnotes

1 Ministry of Environment, Forest and Climate Change. (2022, February 3). India's Stand at COP-26. Government of India. https://pib.gov.in/PressReleasePage.aspx?PRID=1795071

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