Supply Chain Sustainability Assessment of Mica sector in Jharkhand

Analysis & Report

CRB CENTRE for RESPONSIBLE BUSINESS
Enabling Change for Impact

Contents

CRB CENTRE for RESPONSIBLE BUSINESS
Enabling Change for Impact

Disclaimer

This report is a result of work done by Centre for Responsible Business (CRB) with the support from Terra des Hommes and presents information derived from various sources as indicated in the report. CRB will not accept any liability for loss arising from any use of this document or its content or otherwise arising in connection herewith. The designations employed and the presentation of the material in this publication does not imply the expression of any opinion concerning the legal status of the country, territory, city or area or of its authorities, or concerning delimitation of its frontiers or boundaries. Moreover, the views expressed do not necessarily represent the decision or the stated policy of CRB nor does citing of trade names or commercial processes constitute endorsement.

The findings are based on the interviews, group discussions, statements made by the mica industry actors, senior government officials, user industries, using a standard questionnaire used during the project. The validation and verification of the findings is restricted to the documents and information which could be obtained during the onsite assessment. The conclusions and recommendations contained within this report are those of CRB.

No use of this publication may be made for resale or for any other commercial purpose whatsoever without prior permission in writing from CRB.

I. Need for Sustainability in the Indian mining sector

India is endowed with a big reserve of metallic and non-metallic minerals. Mining sector is an important segment of the Indian economy, though the growth in the sector has been stagnant for the last few years at 1.2%. If India has to achieve 7-8% growth consistently, it would be an imperative to develop the mining sector[1]. Since independence, there has been a pronounced growth in the mineral production both in terms of quantity and value. India produces as many as 95 minerals, which includes 4 fuel, 10 metallic, 23 non-metallic, 3 atomic and 55 minor minerals (including building and other materials)[2].

Sustainable mining is crucial for the promotion of inclusive growth of the sector. Mining has always been under close scrutiny due to various socio-economic and environmental challenges associated with the process of mining. As per the Indian Constitution, development and regulation of mines and minerals is controlled by the Union government. The Mine and Minerals (Development and Regulation) Act 1957 was amended in 2015[3], to add the provision for a simple and transparent mechanism for granting mining lease or prospecting licence through competitive bidding besides assured tenure and easy transferability of mineral concession granted through auction, strict penalty provision to deter illegal mining. However, laws and regulatory instruments work unsatisfactorily due to weak enforcement and inadequate coordination among government agencies especially the national and state levels; which present difficulties for achieving sustainable development in this sector.

Jharkhand has been a leading producer of mica since long. But due to various legal and environmental conflicts related to mining and processing of mica, the sourcing of mica has become a challenge in Jharkhand – and therefore has had a ripple effect on the entire supply chain. In spite of the closure of mica mining due to the above reasons, a considerable volume of mica still finds its way out through the ports of Calcutta and Chennai, which suggest the existence of illegally mined mica. For most other metals and minerals, mining companies use advanced technologies, adopt comprehensive environment protection measures, sensitise their personnel on sustainability issues and progressively try to improve their environmental performance. In case of 'illegal' mining (as in case of mica), this is not the case. Additionally, lack of adequate checks and balances and political interference at the local level, the situation has turned grim for those people engaged in this sector. Two main pre-conditions for achieving

[1] http://www.asianage.com/business/economy/091117/7-8-per-cent-contribution-of-mining-sector-in-gdp-can-create-25-million-jobs-in-india.html
[2] https://mines.gov.in/writereaddata/UploadFile/Mines_AR_2017-18_English.pdf
[3] https://mines.gov.in/writereaddata/UploadFile/acts.pdf

sustainability are good governance and self-regulating mining enterprises which are economically viable, financially profitable and technically efficient. Sustainability principles have application for all stages of mining life cycle – exploration, mine planning, construction, mineral extraction, mine closure and post-closure reclamation and rehabilitation.

A Planning Commission report titled "*Sustainable Development, Emerging issues in India's mineral sector*[4]" observed that in the mineral-rich states of Odisha, Goa, Karnataka and Jharkhand, mining has brought about tremendous economic development and at the same time, it has caused significant environmental damages and negatively impacted communities as well. Mining and environmental laws and regulations have not been very effectively enforced. Illegal mining in many cases has similar effect while additionally causing loss of public revenues.

Keeping in view the increasing disputes in the mining sector, a High Level Committee recommended development of a Sustainable Development Framework (SDF) especially tailored to the Indian context in 2005 taking into account the work done by the International Council of Mining and Metals (ICMM) and the International Union for the Conservation of Nature and Natural Resources (IUCN).

Sustainable Development Framework for the Mining Sector

ERM India Pvt. Ltd. and Ministry of Mines (Government of India) developed a Sustainable Development Framework for the Mining Sector (Non Coal, Non Fuel) in India in 2015. The SDF is applicable for all concerned stakeholders in the mining sector (non coal, non-fuel, non-atomic minerals, not covering off-shore mining). SDF comprises principles, reporting initiatives and good practice guidelines. The key principles that define the framework for sustainability in the Indian mining sector are as follows:

i. Incorporating Environmental and Social Sensitivities in decisions on leases
ii. Strategic Assessment in Key Mining regions
iii. Managing impacts at the Mine level
iv. Addressing Land, Resettlement and Other Social Impacts
v. Community engagement, benefit sharing and contribution to socio-economic development
vi. Mine Closure and Post Closure Mining
vii. Ethical functioning and responsible business practices
viii. Assurance and Reporting

[4] http://planningcommission.nic.in/reports/sereport/ser/isid_mining%20_report1206.pdf

II. About the mica sector in Jharkhand

Historically, India has been a world leader in the production and export of sheet mica. The best quality mica deposits occur in Jharkhand[5] and hence the state was the seat of a booming industry. But in the past decades, there has been a steady downfall in the mica industry, due to fall in the demand of natural mica in the world market, use of reconstituted mica, emergence of mica substitutes and various other factors. However, on account of its unique properties, mica continues to be used in raw or processed form in various industries viz. ICT, electrical, paints, automobile, plastic, etc. There is sufficient supply and industrial capability in Jharkhand to meet this demand domestically and in the international market. Greater attention to the mica sector, in line with the Government of Jharkhand's pro-industry strategy, will reinstate the old glory of the sector and provide livelihoods to a large number of people associated with it.

Production, Supply & Industrial use of mica

- In India, the largest mica deposit occurs in Jharkhand (13 million tonnes) with smaller deposits occurring in Bihar, Andhra Pradesh and Rajasthan.
- There is variation in production data between domestic sources like Indian Bureau of Mines, IBM (Fig 1) and international sources (Fig 2).

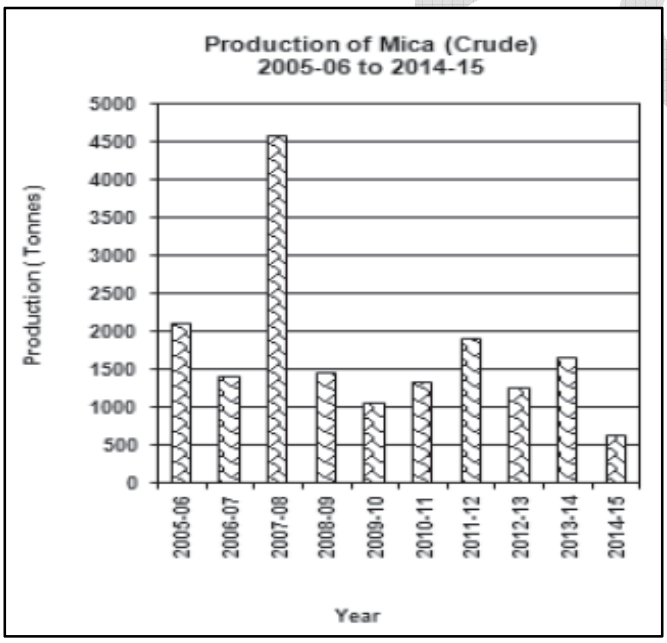


Fig 1: Production trend of Mica in India [Indian Bureau of Mines, Mica Mineral Yearbook, 2015]

[5] According to the JSMDC, Jharkhand has a reserve of 13 million tonnes of mica, and contributes almost 60% of the mica sources across India (http://www.jsmdc.in/web/MineralReservesProduction.php)

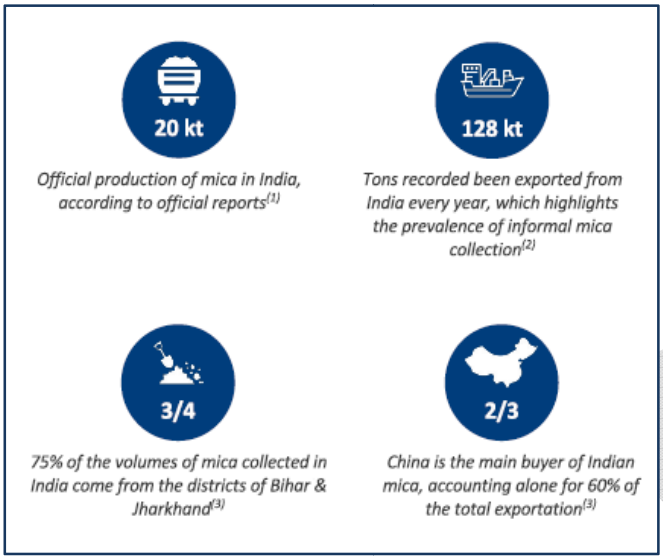


Fig 2: Mica belt in Jharkhand and Bihar [Ref: (1) USGS, 2015; (2) UN Comtrade Data, 2014; (3) TdH, 2016]

- In 2015, mica was transferred from the list of 'major' minerals to that of 'minor' minerals – thereby empowering state governments to develop plans to manage and utilise the mineral.
- There is often news about illegal deep excavation mining of mica especially in some areas of Koderma and Giridih in Jharkhand, which perhaps explains the heavy tonnage of mica being exported out of the ports of Calcutta and Chennai. On papers, there is little or no mining of mica that happens any more in the state, as the state government cancelled mica mining leases.
- Mica however continues to be collected from overburdens of abandoned mica mines, many of which are located in forested areas. This is done by villagers in the proximity at low wages, in the absence of other alternative livelihoods the villagers are employed to gather mica and supply it to the processors through a local network of local aggregators and dealers.
- Given crude and unsafe methods of collection, accidents are not uncommon.
- Further, collection of mica from some of these sites is considered illegal as they fall within protected/reserve forest areas.

Mica is an extremely versatile mineral, widely used in many industries and applications, due to its exceptional characteristics. Figure 3 below shows the wide range of industrial uses of mica. Given such wide application of mica across industries, the global market is slated to grow from US$478mn (2016) to US$669mn (2024) as per Mica Exporters Association (MEA) estimates. This

presents a great opportunity for Jharkhand to revive the mica sector, with due consideration to tackle the above-mentioned challenges.

Properties of Mica

Mica has a number of unique properties that contributes to its wide-spectrum industry use and applications.

Fig 3: Properties of mica *[Mica Exporters Association (MEA), Jharkhand]*

Industrial use

Mica has application across a number of industries including electrical, paints, heavy industries, cosmetics, electronic, etc.

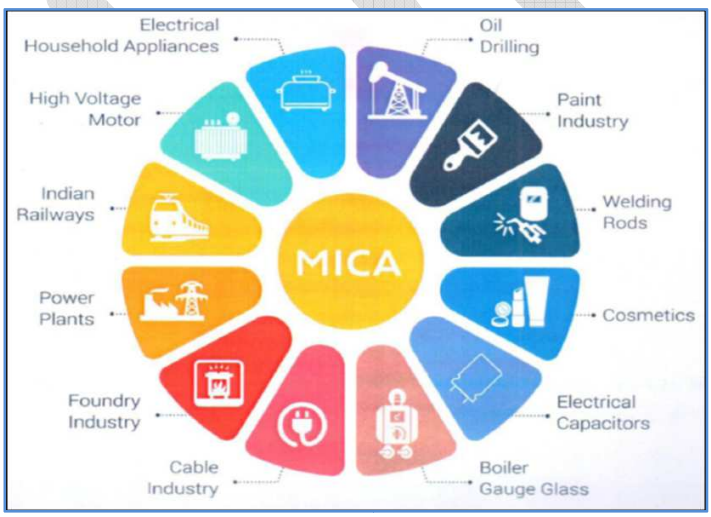


Fig 4: Industrial Use of Mica *[Mica Exporters Association (MEA), Jharkhand]*

III. Supply chain mapping of mica sector in Jharkhand

Jharkhand has led the production of mica in India. Once boasting over 700 legal mines, the industry was first by a change in global demand of mica in the '60s and then ultimately in 1980 with the enactment of the Forest Conservation Act. Given the location of many of the erstwhile mica mines inside forest areas in the districts of Koderma, Giridih and Hazaribagh – the mining of mica from these areas was stopped, thereby forcing most mines to close[6].However, renewed interest in mica (scrap mica) lured traders and operators to access hundreds of closed mines, many of which lie in the forests of Jharkhand's Koderma and Giridih districts – and thereby result in conflict with the local police and the forest administration.

Enforcement of the Forest Protection Act posed several challenges to mica mining. Consequently, the state government stopped renewing the mining leases due to the enforcement this act. Although mica mining was declared 'illegal' due to non renewal of leases, mining still continued in the state (illegally), coupling the problem by adhering to lesser safety and security measures for the miners.

One of the detrimental effects of the closure of the legal mines was the decrease in the family incomes of the collectors as laborers lost their jobs. Unable to source mica from the mines, mica dumps[7] became a lucrative source for mica collection. However, the quality of mica accrued from these sources (scrap and powder mica) is considered inferior in quality as compared with mica sheets obtained from deep mining of mica. Apart from the economic disadvantages, the dealers are unable to source good quality mica from the dumps, thereby suffering heavy losses at the hands of international buyers. Due to the reduced opportunities in mica sector, many traders are now diversifying their business for survival. More importantly, the present state of the regulatory framework in the mica mining sector is guarded by several laws such as The Bihar Mica Act, 1957, The Mines and Mineral (Development and Regulation) Act, 1957 and The Jharkhand Mineral Dealer's Rule, 2007.

To tackle some of the social and economic challenges, the Government of Jharkhand is taking certain decisive steps towards legalisation of mining (both collection of debris or *dhibra* from the overburden of the abandoned mines; and deep excavation mining). Auctioning of some mica dumps in 2018 has been one such step, which was partly successful. The Department of

[6] https://in.reuters.com/article/india-child-labour/india-begins-legalising-mica-mining-after-child-worker-deaths-expose-idINKBN1802AD

[7] According to the Bihar Mica Act, 1947, mica dump means any collection of refuse consisting wholly or largely of mica

Geology and the Department of Mining/JSMDC are working together to initiate further auctions of the debris site and identify new mica blocks in the state. It is estimated that these new blocks would be ready to be auctioned sometime end-2018/early 2019.

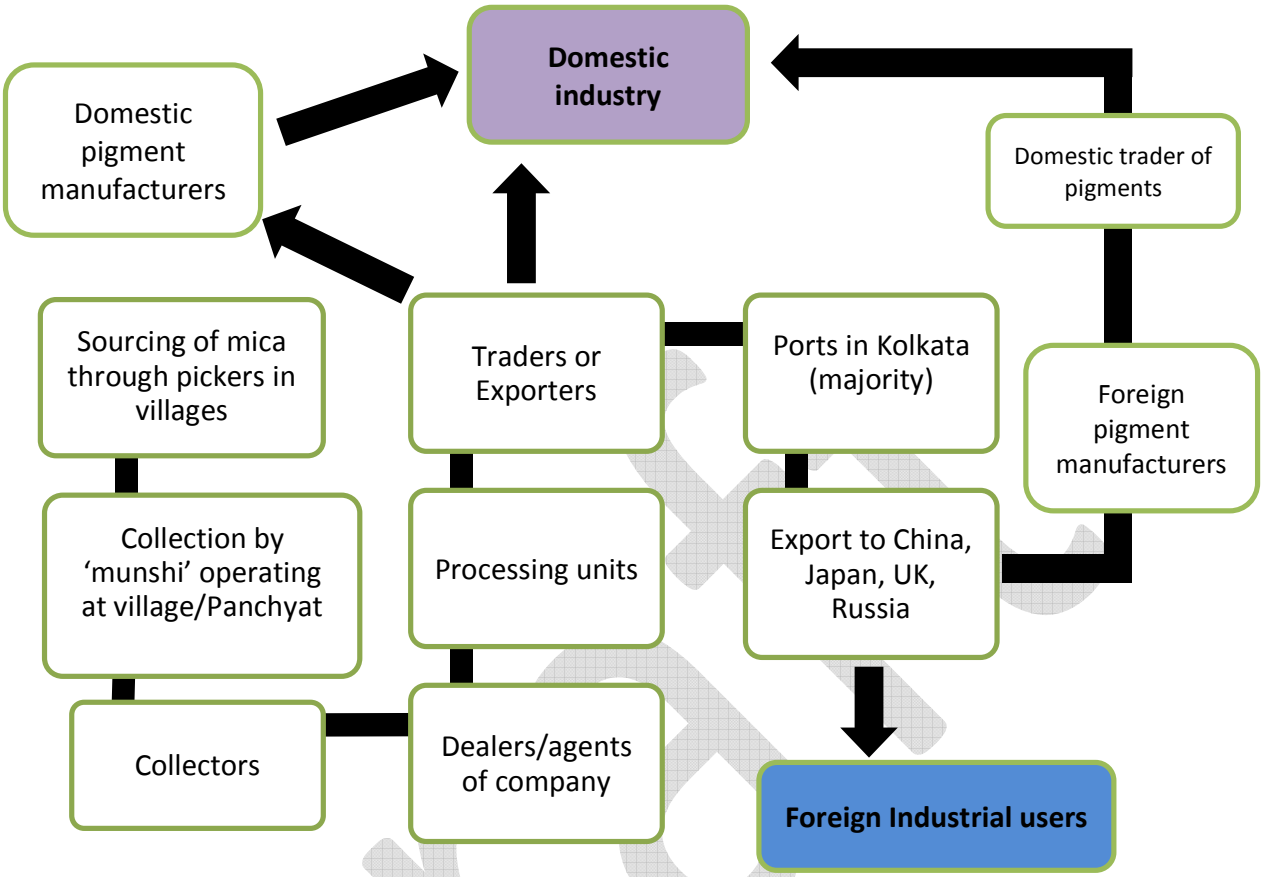
According to Jharkhand's Mines Commissioner, Shri Aboobacker Siddique[8], the process of legalising the industry will start with authorities selling off dumps of scrap mica, which people were taking illegally. Around 100 have been identified. The government will then focus on auctioning off old mica mines and other reserves for mining. Legalising and organising the mines, along with strict lease conditions, could facilitate the implementation of good practices and control systems. Although legalising the mines is a decisive step, the full extent of the positive impact it can have is dependent on how it is conducted and managed.

At a stakeholder consultation meeting organized by Centre for Responsible Business (CRB) and Federation of Jharkhand Chambers of Commerce and Industry on 26 April 2018, Ms Anjali Kumari, Director of Department of Geology, Govt of Jharkhand further mentioned while talking about the mining blocks, she emphasized that 14 blocks and 31 blocks have been identified in Koderma and Giridih respectively and will be soon put up for auction[9]. During this meeting Shri Lalit Kumar, Deputy Director, Director of Mines& In-Charge on Mica, Jharkhand State Mineral Development Corporation (JSMDC) also mentioned that government is taking concrete steps to revive the industry through auctioning of dhibras, issuing of directives to ensure smooth transportation of mica, identification of mining blocks, regularly engaging with local government as well as industry to ensure hassle free sourcing of mica[10].

Supply chain of Mica: Process and actors involved

The flow of mica comprises 2 categories of actors: (i) supply chain actors and (ii) non supply chain actors. The supply chain actors are directly engaged in the mica industry viz. local pickers, collectors, community representatives, processors, traders, exporters and user industry. The non supply chain actors are indirect stakeholders of the mica sector viz. Government agencies/institutions (district, state & national), industry associations, policymakers, research organizations etc.

[8] https://in.reuters.com/article/india-child-labour/india-begins-legalising-mica-mining-after-child-worker-deaths-expose-idINKBN1802AD
[9] Meeting Report on 'Towards a Sustainable and Inclusive Mica Industry in Jharkhand', 26 April 2018
[10] Meeting Report on 'Towards a Sustainable and Inclusive Mica Industry in Jharkhand', 26 April 2018



Centre for Responsible Business (CRB) held a number of discussions with various relevant stakeholders in the state and elsewhere, as well as undertook secondary research to understand the supply chain of mica from Jharkhand, and the current status of the flow of ths mineral. The same has been explained in brief in this section below:

Sourcing and Collection of mica from dhibras: The sourcing of mica is primarily being done by 'pickers' who belong from the community and picking mica from the debris in the villages and neighbouring areas. After picking and basic sieving of mica, the mica is collected by 'munshi' who usually from the village itself or Panchayat.

Processing of mica: These collectors from the villages/Panchayat sell the mica to dealers/agents of companies that process mica into various kinds of mica products

Processers and Traders: These processors sell/trade various products made from mica to the domestic as well as international market. Majority of the mica is being used domestically by the pigment manufacturing industries. Rest of the mica is being exported through the ports of India; mostly from Kolkata ports to various countries like China, Japan, UK and Russia. Exported

mica was used by mostly the pigment industry and other industry users. This pigment (mostly manufactured by China) is again imported by India and supplied domestically as well as internationally to various industry users.

This mapping may be bit crude keeping in mind that a number of middlemen and other actors are involved in the supply chain that may not have been captured in the figure above but gives a very fair idea of the supply chain.

Non supply chain actors of the mica sector in Jharkhand

Sustainable supply chain systems have been initiated and are managed mainly by the market and civil society, without directly involving the government. During the last decade, a growing number of multi-actor governance systems aiming for sustainable production have emerged in the international supply chains. Market and civil society actors play a dominant role in initiating and governing these systems, while governments seem to be on the sideline. The tables below list the non supply chain actors identified and interacted with during the process of supply chain assessment by CRB.

List of critical non supply chain actors identified-District level (Koderma & Giridih)

Category	Name	Designation	Department/Agency
Government	Dr Bhuvnesh Pratap Singh	Deputy Commissioner Koderma	
Government	Shri Manoj Kumar	Deputy Commissioner Giridih	
Government	Sri. Mihir Salkar	District Mining Officer, Koderma	Department of Industries Mines and Geology
Government	Sri Raja Ram Prasad	Additional Assistant Mining Officer, Koderma	Department of Industries Mines and Geology
Government	Sri. Satish Kumar Nayak	District Mining Officer, Giridih	Department of Industries Mines and Geology
Government	Sri Vibhuti Kumar	Assistant Mining Officer, Giridih	Department of Industries Mines and Geology

NGO	Manoj Dangi		Rashtriya Jharkhand Seva Sansthan

List of non supply chain actors identified at the State level

Category	Name	Designation	Department/Agency
Government	Shri S.K. Barnwal	Secretary	Department of Industry
Government	Dr Aboobacker Siddique	Secretary Managing Director	Department of Mines and Geology Jharkhand State Mineral Development Corporation[11]
Government	Shri Uma Shankar Singh	Labour Commissioner	Labour, Employment & Training Department
Government	Mukhmeet Singh Bhatia	Principal Secretary	Women, Child Development & Social security Department
Government	Sri Rakesh Singh	Special Secretary	Department of Labour
Government	Sri S. I. Minz	Director	Department of Mines
Government	Sri K Ravi Kumar	Director	Department of Industries
Government	Sri Lalit Kumar	Deputy Director Officer-in-charge	Department of Mines Jharkhand State Mineral Development Corporation
Government	Ms Anjali Kumari	Director	Department of Geology

[11]Under the Department, the Jharkhand State Mineral Development Corporation has been functioning and running a number of mines of graphite, limestone, kyanite, stone etc.The corporation has been allotted a number of coal Blocks by the Govt. of India for their developments. It also functions as nodal agency to provide coal to small Units released by Coal India Ltd.

Government	Dr. Sanjay Kumar, IFS	Principal Chief Conservator of Forest & Head of the Forest Force	Forest, Environment & Climate Change Department
Government	H C Yadav`	Director of Mines Safety	Directorate General of Mines Safety, Koderma
Government	A.K Mishra	Chief Inspector of Factories	Department of Industries
Government	Shri Anupam Nandi	Regional Controller	Indian Bureau of Mines
Industry Association	Shri Bharat Poddar	Chairman, Mines & Mineral Sub committee	Federation of Jharkhand Chamber of Commerce & Industries
Industry Association	Sri Deepak Kr. Maroo	Vice President	Jharkhand Small Industries Association
Industry Association	Rahul Singh	Deputy Director	CII Jharkhand office
Industry Association	Bharat Jaiswal	Head	FICCI Jharkhand office
Industry Association	Shaleen Rao	Resident Officer	Single Window Cell, Department of Industries
Industry Association	Bal Krishna Singh	Regional Director	Indian Chamber of Commerce

List of non supply chain actors identified and interacted at the national level

Category	Name	Designation	Department/Institution
Government	Shri Prithul Kumar	Director	Ministry of Mines
Industry Association	Pushkar Jangale	Head-PR & Media	The All India Plastics Manufacturers' Association (AIPMA)
Industry Association	Hiten Bheda	President	The Indian Home & Personal Care Industry Association (IHPCIA)
Industry Association	Rajoo Goel	Secretary General	Electronic Industries Association of India

			(ELCINA)
Industry Association	S K Mishra	Secretary General	Indian Electrical & Electronics Manufacturer s' Association (IEEMA)
Industry Association	Amit Jha	Policy and Regulation	Manufacturers Association For Information Technology (MAIT)
Industry Association	Karthikeya	Senior Officer	Society of Indian Automobile Manufacturers (SIAM)
Industry Association	Manish Sharma	President	Consumer Electronics and Appliances Manufacturers Association (CEAMA)
Industry Association	Jatin Aggarwal	President	Indian Paint and Coating Association (IPCA)
Industry Association	Surendra Kumar Vats	Vice President	Indian Small Scale Paint Association

Supply chain actors' identification and listing

National stakeholders identified previously have been segregated based on the industry uses of mica viz automotive, paint & coatings, cosmetics & personal care, electrical, chemical & pharmaceuticals, electronics. These include industry as well as sectoral industry associations. While reaching out and interacting with the stakeholders, one of the major observations was lack of understanding and awareness regarding responsible sourcing issues, understanding of the supply chain and traceability of mica.

List of supply chain actors identified by CRB at the national level

S.No	Industry use	Company	Name	Designation
1.	Automotive& automobile	BMW	Rupesh Gumber	Purchasing Head
		Volvo	Vinod Ugare	Manager- Real estate
		MRF	Mohan Kurien	VP- Materials
		Eicher Motors	S Sandilya	Purchase
		Apollo Tyres	Praveen Tripathi	Head Purchase
		JK Tyre	Jasvinder Singh	Purchase
		Bridgestone	Navin Choubey	GM- Purchase
		Tata Motors	Abhay Pathak	Sustainability Lead
		Force Motors	Anand Munda	Purchasing officer
		Mahindra & Mahindra	Pradeep Panigrahi	Deputy General Manager-Corporate Sustainability
		Hero Motocorp	Indiver Bhatia	Purchasing Manager
2.	Paints & coating	Shalimar Paints	Anil Kumar Pandey	Head- Purchase/ Procurement
		Asian Paints		
		Nerolac	Pravin Shetty	Sr. Officer- Purchase
3.	Pigments	Sudershan Chemicals	Nagesh Kamath	
		Ultramarine & Pigments Ltd	Kartikeyan	Purchasing Officer
		FX Pigments Pvt. Ltd.	Shiv Ranjan	Purchase Head
		Koel Colours Private Limited	Prachi Desai	Purchase

		Heubach	Dipak Shah	Manager Purchase
		DIC	Vivek Tiwari	Procurement Head
4.	**Plastics**	Supreme industries	Manish Poddar	Manager- Purchase
		Nilkamal	Ganesh H Devadiga	DGM Purchase
5	**Electronic**	Kirloskar Electric Company Limited	Vijay R. Kirloskar	Chairman
		Schneider Electric	Kapil Gulati	Procurement- Head
		Philips Electronics India Ltd	Ada Ratnam	Marketing Leader
6	**Electrical**	Finolex	Ajay Gokhale	Asst. VP- materials
		Polycab	Rashmikant Mehta	Procurement- Head
		Havells	Sanjay Mohan Sharma	VP- Materials
		Bajaj Electricals	Prashant Bhatmule	Purchase- Head
		V-Guard Industries Ltd	Jayasree Divadas	Deputy Manager- Procurement
7	**Cosmetics**	Loreal India	Abhishek Jaiswal	Procurement Manager
		Hindustan Unilever	Rupesh Agrawal	Head- Purchase
		P&G	Asif Ghosh	Procurement Head
8	**Public Sector Enterprises**	Indian Railways		
		Hindustan Aeronautic Limited		

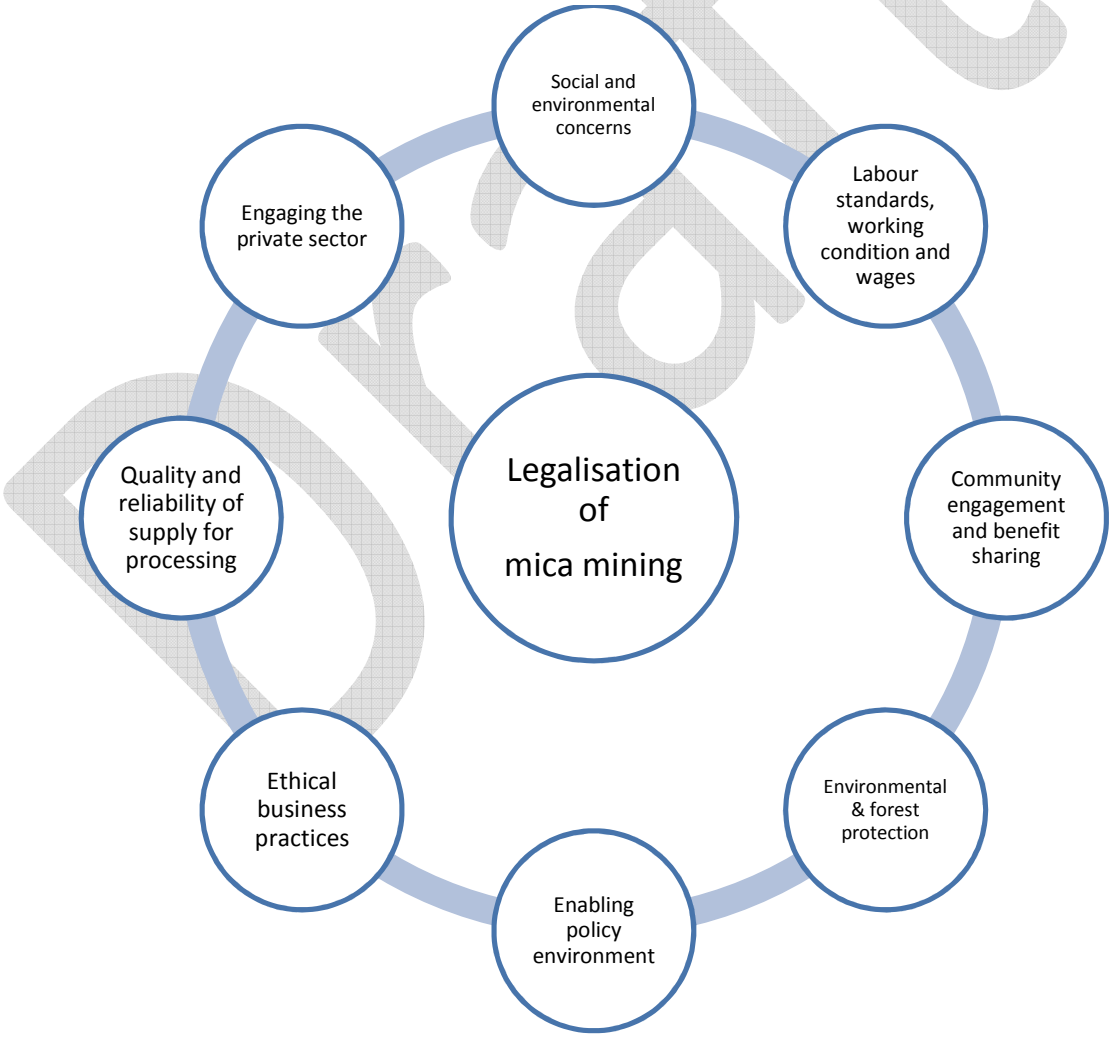
List of supply chain actors with whom CRB interacted-District level (Koderma & Giridih)

S.No	Organization	Name
1	Baijnath Mica supply	Shankar Saw
2		Chandrika Sao (working as Munshi/collector)
3	Daruka & Co	B N Daruka
4	Daruka & Co	Kamal Daruka
5	Daruka & Co	Kedarnath Ramgopal
6	Daruka Enterprises	Shailesh Daruka
7	Jai Prakash Modi	Jai Prakash Modi
8	K P R, Giridih	Manish Tarway

9	KNRG	Kamal Daruka
10	M P Mica EntreprisesPvt Ltd	Sanjay Bhudo
11	M/S K P Modi	K P Modi
12	M/S Prakash Modi	Prakash Modi
13	M/S Vikar Kumar	Vikar Kumar
14	Mica Exporters Association	Lakhi Prasad Gourisaria
15	Mica trader	Pankaj Kumar
16	Mica trader	Srijan Kumar
17	Modi International	Ramdev Modi
18	Modi International	Milan Chatterjee
19	Modi Mica Enterprises	Mukul Modi
20	Makhan Lal Sanghai	Nishit Sanghai
21	Pachisia& Co	Sanjay Kumar Pachisia
22	Modi Mica Enterprises	Rajendra Modi
23	Raw Mica Mykanite Company	Ashok Ram
24	Ruby Mica Co Ltd	Ankit Bagaria
25	Ruby Mica Co Ltd	Rajendra Bagaria (Secretary, Mica Exporters Association)
26	Tarway Pulverising works	Krishna Malan Tarway
27	Universal Mica & Minerals Pvt Ltd	Alok Bhadani
28	Universal Mica & Minerals Pvt Ltd	Pradeep Bhadani

IV. Strengthening Sustainability Elements in the Mica Supply Chain

Given the nature of its origin and the supply chain, it is critical that a future plan/strategy for the mica sector integrates key social, environmental and economic sustainability considerations. Keeping in mind that the process of legalisation of mica mining is moving slowly but steadily, the supply chain will be impacted to a huge extent. Legalisation has become a cornerstone now for the survival of the industry. Although legalising the mines is a decisive step, the full extent of the positive impact it can have is dependent on how it is conducted and managed. The figure below shows the elements of sustainability for the mica supply chain which are impacted and tied up with the legalisation of mica in Jharkhand.



In line with the Sustainable Development Framework (2014) of Government of India (refer to Annexure I for further details), some of the key sustainability issues to be considered while developing a **roadmap for a sustainable an inclusive mica sector for Jharkhand** are as follows:

S.No	Sustainability elements (Derived from the SDF, Ministry of Mines, Govt of India)	Linkage to the supply chain
1	Social and environmental concerns in leasing	Currently due to malpractices in the mica sourcing, the supply chain is overburdened with corruption and other governance related challenges. Additionally, the problem of sourcing (of 'legal' mica) is also contributing to revenue losses for the state. Through legalisation of mica sourcing with proper systems, monitoring and auditing in place, many of the social and environmental concerns can be addressed, contributing to overall sustainability of the sector and providing revenue to the state.
2	Labour standards, working condition and wages	Since the current sourcing practices of mica are questionable, the industry is standing on a weak ground that does not fall under the scope of Indian laws and regulations. Moreover, local industry also cannot be held responsible or accountable under the current scenario. Legalisation of mica mining would not only lead to application of Indian labour laws and regulations but also ensure safe working conditions along with health and safety of the workers involved across the supply chain (from collectors to dealers and processors).
3	Community engagement and benefit sharing	This is one of the most important pillars of sustainability. The community should also be one of the prime beneficiaries of the growth and development of the sector. There is an urgent need to upscale engagement with the community in terms of skill development, providing alternate livelihoods, better

		education facilities to contribute to overall upliftment of the community. Mica is the major source of income and employment in the area. Hence, it is essential for the private sector, government as well as CSOs to work together to ensure balanced and innovative mica exploration and processing in the state (a model for other minor minerals).
4	Environmental and forest protection	The mining can be done responsibly along with protecting the natural resources and replenishing the same. Environmental Impact Assessment (EIA) should be better implemented and the impact of mining on the local environment and communities closely monitored and reported to the Govt of Jharkhand periodically. There are several forest management programmes that can be implemented to tackle the environmental problems. Most of the mica is lying in the forested areas, hence it is necessary to plan and conduct mining in a responsible manner.
5	Quality and reliability of supply for processing (local value-addition)	Currently due to the erratic and disputable sourcing of mica, the quality of mica and reliability of supply has diminished over the years. This has not only led to decline in market but also weakened India's position in the global market. High competitiveness and influx of new suppliers around the world needs to be considered while designing the sustainability roadmap of the sector. A centre of excellence on mica could be envisaged which would lay down the quality criteria for mica and also offer world class testing facilities
6	Enabling policy environment	There is an urgent need for clarification as well as updation of rules and regulations for improving the supply chain of the mica from sourcing, transportation, processing and trading. Currently, there is a lot of confusion among the industries due to the conflicts amongst existing laws and regulations. Further some of the laws/rules/decisions taken at the state level

		(Ranchi) donot seem to flow down to the districts (Koderma and Giridih). In order to make the sector sustainable, it is extremely crucial to create an enabling policy environment favouring industrial growth along with community development. The Government of Jharkhand is pro-industry and has initiated the *Momentume Jharkhand* initiative. Encouraging entrepreneurs and expanding the sector should be part of the strategy of the government. Such a strategy should have the elements of sustainability strongly integrated.
7	Ethical business practices	It is difficult for companies and manufacturers to ensure their supply chain is 'clean' and they are not indirectly fuelling child labour, other human rights abuses or any other violations. The mica supply chain can be long and complex. 70% of mica out of India comes from illegal mines in Jharkhand & Bihar.99% of this mica goes directly to China where it is introduced into different industries and ends up in European, American and Asian products. Hence, assigning and cascading responsibility and accountability across the supply chain is very necessary for the sustainability of the sector.
8	Engaging the private sector	Private sector has one of the major roles to play in the sustainability of the sector. From community engagement to driving policy reforms, the private sector (regional, national and international) has an important role to play. There are quite a few success stories wherein cosmetics companies and ingredient manufacturers have been working alongside the government for the last decade to clean up their supply chain. However, this industry is only responsible for a very small part of mica's use. The time is ripe to step up and strike the conversation on responsible sourcing of mica.

V. Stakeholder Interest Analysis

There are three steps to follow in Stakeholder Analysis. First, identification of the stakeholders; secondly, work out their power, influence and interest, to prioritise accordingly. Finally, develop a good understanding of the most important stakeholders, so that we know how they are likely to respond.

Based on the field visits and interactions with various stakeholders, we have developed a preliminary structure of the stakeholder interest grid. Our objective is to understand the power/influence/interest of various stakeholders and their position to work towards a sustainable and inclusive mica industry.

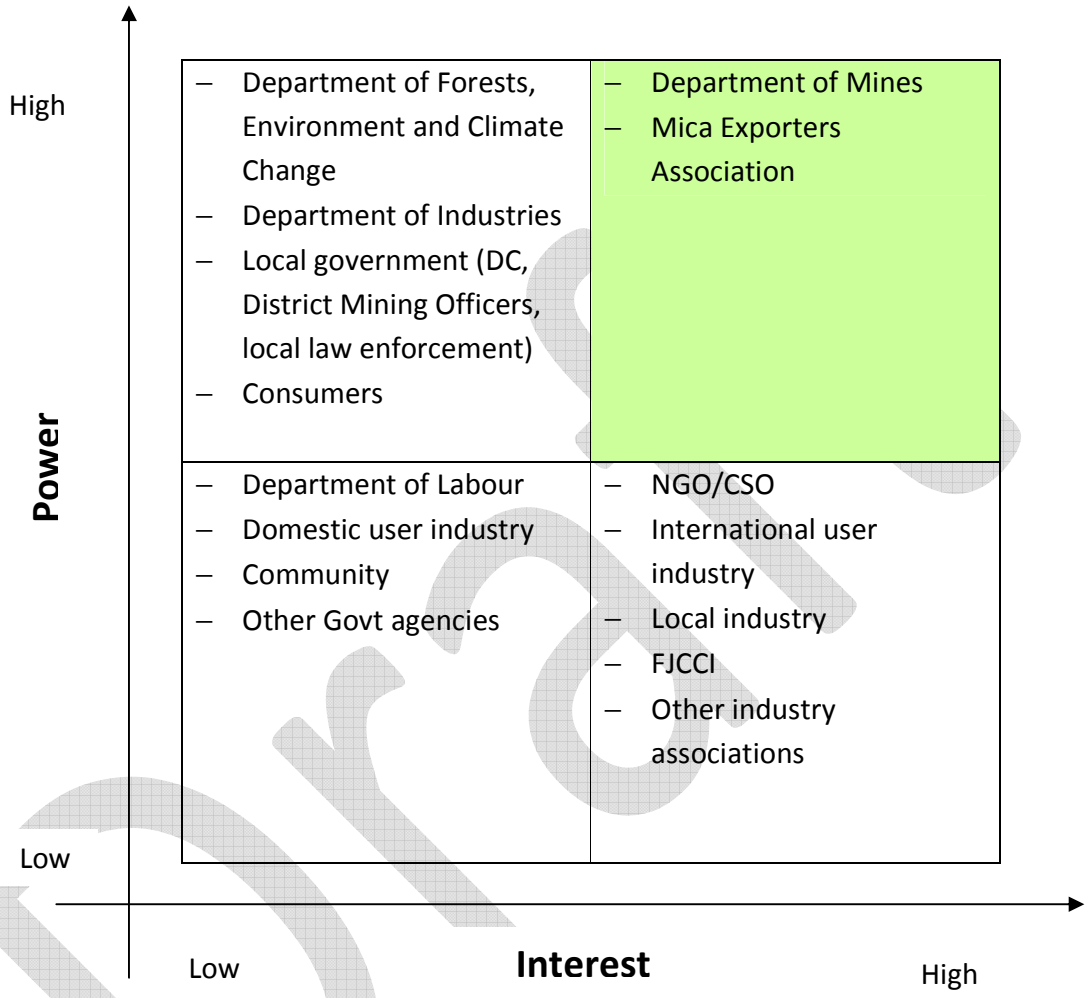
1. ***Identification of stakeholders***

Government	Industry	Others
Local government (DC, District Mining Officers, local law enforcement)	Domestic user industry	NGO/CSO
Department of Mines	International user industry	Community
Department of Industries	Local industry	Mica Exporters Association
Department of Labour		FJCCI
Department of Forests, Environment and Climate Change		Other industry associations
Ministry of Mines		Consumers
Other Govt agencies		

2. ***Prioritising the stakeholders***

- *High power, highly interested people (Manage closely):* Full engagement with the stakeholders, and make the greatest efforts to satisfy them.
- *High power, less interested people (Keep Satisfied):* put in enough work and rapport with these stakeholders to keep them satisfied
- *Low power, highly interested people (Keep Informed)*: adequately inform these stakeholders, and talk to them to ensure that no major issues are arising. Stakeholders in this category can often be very helpful for gaining information

- *Low power, less interested people (Monitor):* again, monitor these stakeholders; may or may not require extensive communication.



VI. Conclusion

This report portrays the current situation and reality of the mica sector as well as its supply chain in Jharkhand. The overall goal is to improve the sustainability performance of the mica supply chain. It is evident that the user industries (especially - automobiles, ICT/electronics, electrical, paints, plastic and cosmetics) are growing at a fast pace, indicating considerable demand for mica in these industries both nationally and internationally. If Jharkhand is able to meet this demand, it would ensure organisation of the supply chain and also jobs for the workers. There is a need for responsibility, accountability and transparency across the supply chain of mica in Jharkhand. The level of awareness and recognition of the issue of responsible sourcing is still in its nascent stage among the private sector.

In addition to the above, the scenario at the ground level is also undergoing major transformation, due to a number of reform measures undertaken by the government. The government has started the process of legalisation by auctioning of mica dumps. Furthermore, the government is also in the process of identifying mica blocks for mining which may close by the end of 2018. The process of legalisation will have a huge impact and evolve the supply chain; which in turn will impact the sustainability parameters of the same. The table in Section IV has tried to make some of the connections and predictions for the sustainability parameters and the impact of legalisation on them. Further organisation of the mica supply chain will happen once the mining blocks identified. Hence, it is very evident that the situation is volatile as well as dynamic under the current circumstances.

The Ministry of Mines has developed the broad Sustainability Development Framework (SDF), which needs to be aligned with specific mining sectors (e.g., mica) – so that it can serve its purpose of being a practitioner's guide. But there is a need for sector specific tailor made strategy based on the typicality of the mica sector. The Ministry of Mines at the centre is also pushing the states for the SDF to be applied across specific minor minerals. But so far, not much has been achieved in this direction. Hence, there is a need to form a coalition to discuss the specific issues and challenges in the sector and the drive the agenda towards sustainability.

Annexure I: Principles of Sustainable Development Framework, Ministry of Mines, Government of India

A working definition for 'Sustainable Development' in the mining sector was outlined, based on consultation with sector experts, secondary sources on the subject and the Indian context. "Mining that is financially viable; socially responsible; environmentally, technically and scientifically sound; with a long term view of development; uses mineral resources optimally; and, ensures sustainable post-closure land uses. Also one based on creating long-term, genuine, mutually beneficial partnerships between government, communities and miners, based on integrity, cooperation and transparency". The SDF framework incorporates not only regulatory requirements, but goes beyond that and recommends practices and best in class aspects to address the challenges of sustainable development more fully. The key Principles of the SDF are as follows:

i. **Incorporating Environmental and Social Sensitivities in decisions on leases:** This principle integrates sustainable development concept at the earliest phase of life cycle. The underlying philosophy of the principle is to categorise mineral bearing areas based on an environmental and social analysis taking a risk based approach. This principle allows for the government to balance environmental and social interests of the nation, with mining priorities in the longer term;

ii. **Strategic Assessment in Key Mining regions:** Understanding that mining activities occurs in clusters which have impacts at a regional level, undertake a strategic assessment of regional and cumulative impacts and develop a Regional Mineral Development Plan based on as assessment of the regional "capacity" at periodic intervals.

iii. **Managing impacts at the Mine level impact** through sound management systems. The key elements of this principle are impact assessment of key environmental, social, health and safety issues, development of management framework and systems at the mine level and continual improvement of the same on the basis of international standards on a self driven basis.

iv. **Addressing Land, Resettlement and Other Social Impacts.** This principle demands a comprehensive assessment of social impacts and displacement of mining projects at the household, community and mining region level, and management commitment to address those impacts through mitigation measures and management plans;

v. **Community engagement, benefit sharing and contribution to socio-economic development.** This principle seeks commitment to regular engagement with the local

community as well as sharing of project benefits with the affected families which is also in sync with the MMDR Act.

vi. **Mine Closure and Post Closure Mining** operations must prepare, manage and progressively work on a process for eventual mine closure. This process must cover all relevant aspects and impacts of closure in an integrated and multi-disciplinary way. This must be an auditable document and include a fully scoped and accurate estimate of planned cost of closure to the company.

vii. **Ethical functioning and responsible business practices.** This principle underlines the need for ethical business practices and a strong sense of corporate responsibility among mining companies. It recommends companies to go beyond legal compliance; and

viii. **Assurance and Reporting:** This principle seeks mining sector stakeholders to assess their performance against this SDF and demonstrate continual improvement on this performance over the life of the project. It requires this performance to be reported in a structured manner in a Sustainable Development Report to be disclosed in the public domain as well as to regulatory agencies to consider during approval processes.