



MGMI News Journal

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Breaking new ground with cutting edge technology



NMDC - Striding towards the Future

Ranked amongst India's topmost companies in terms of its robust financials, NMDC's eco-friendly, scientific and safe mining operations have earned recognition for it not just as the world's lowest cost producer of iron ore, but also as the leader in its category. In step with the changing times, NMDC Ltd., has shifted from being a single commodity, single customer and limited mining operations to supplying multiple commodities to several customers across distant geographical locations.



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MGMI AWARDS AND MEDALS FOR OPEN TO ALL

Last date of receipt of nomination: 16th July, 2019

Nominations for the following Institute's Medals and Awards are invited from Concerned Persons in the Proforma containing details of the person proposed for nomination as under:

- 1. Name of the person proposed:**
- 2. Date and place of birth of the person nominated:**
- 3. Designation, address, phone number and email ID:**
- 4. Educational qualification:**
- 5. Professional experience:**
- 6. Membership of professional bodies:**
- 7. Details of outstanding works in Coal Mining, Environmental Mitigation, Geological Science, Indian Mineral Industry, Engineering Service, Coal Petrology, Mineral Beneficiation, etc. as applicable:**
- 8. List of publications with names of Journals and dates of publication (If possible, send reprints):**
- 9. Title of paper of Coal Mining etc. as applicable published in MGMI Transactions for which the award is proposed:**

The nomination to be sent to the **Honorary Secretary, The Mining, Geological and Metallurgical Institute of India**, GN 38/4 Sector V, Salt Lake City, Kolkata - 700 091

within the last date of receipt of nomination. The proposal to be given in 7 (seven) copies and 2 (two) copies of recent passport size photographs of the nominee. Self nomination is discouraged. Particulars of sponsoring:

Members for the above awards:

1. Name of the proposer:
2. Designation, address, phone number and email ID:
3. Any special observation about the candidate:
4. Signature of the proposer:

Details of MGMI Awards and Medals are given below :

- 1) Dewan Bahadur D.D. Thacker Coal Mining (Gold) Medal 2018 – 19 :**

THE SEARCH COMMITTEE WILL RECOMMEND THE NAME OF THE CANDIDATE FOR THE MEDAL

[Any person who has contributed a paper of excellence and originality on Coal Mining or on Technology of Science applied to some branch of Coal Mining to the Transactions of the Institute in conformity with the by-laws relating to publication of papers by the Institute or who has done outstanding work in Coal Mining or related Science shall be eligible for the award.]

- 2) Dr. J. Coggin Brown Memorial (Gold) Medal 2018 – 19 for**
 - (i) Geological Sciences and**
 - (ii) Non-Coal Mining :**

Any Person who has made outstanding contribution to (i) Geological Science and (ii) any branch of Non-Coal Mining are eligible for the above awards (i) and (ii) respectively.

3) Indranil Award for Metallurgy 2018–19:

Any Person who has made outstanding contribution in any branch of Metallurgy or Ferroalloys and presented a paper in this connection to the Institute during the year for which the award is proposed and which is read in an Ordinary General Meeting of the Institute or any person who has contributed an outstanding paper on the subjects and published in any Journal in the Country is eligible for the award.

4) John Dunn Medal 2018 – 19:

Any person who has extended outstanding service to the Indian Mineral Industry (Administrative or Technical) shall be eligible for the above award.

5) Engineering Gold Medal 2018 – 19:

Any person who has done outstanding work in Mining Science but with special reference to technical advances in Engineering Services, Installation, Layout, Design and Development of Machineries for Mining shall be eligible for the award.

6) Sukumar Rakshit Award 2018 –19:

(A medal and cash award of Rs.1000/-)

Any person who has made outstanding contribution in Stowing or Rock Mechanics or Mine support system in Coal Mine and submitted a paper in this connection to MGMI for publication or any person who has contributed an outstanding paper on any of the subjects mentioned above and published in any journal in the Country shall be eligible for the award.

7) Smt. Bala Tandon Award 2018 –19:

Any person who has made outstanding contribution for upgrading the quality of life in Mining Environment shall be eligible for the above award.

8) M.L. Rungta Award 2018 –19:

Any person who has rendered outstanding service in the cause of Small Mining in the Country shall be eligible for the above award.

9) Subrata Ghosh Coal Petrology Award 2018 – 19:

(A cash award of Rs.1000/- and a Certificate)

Any person who has rendered outstanding work in the Science of Coal Petrology during the **last five years** including the current year shall be eligible for the award.

10) R. P. Bhatnagar Award 2018 –19:

(A medal and cash award of Rs.5000/-)

Any person who has made an outstanding contribution in Mineral Beneficiation during the **last five years** including the current year shall be eligible for the award.

11) D.N. Thakur Award 2018 –19:

Any person may sponsor any recognized Scientist, Academician or Technologist for the above award in the prescribed proforma.

12) Lala Ramkishore Singhal Award 2018 –19:

Any person who has made an outstanding contribution in the field of Development & Conservation of Minerals & Environment in and around Metalliferous Mines (other than coal and oil) during the **last five years** including the current year shall be eligible for the award.

13) H.B. Ghose Memorial Award 2018 –19:

The award is given separately for Best Manager of one Underground and one Opencast Mine for their best safety performance based on “**Severity Index**”. The detail calculation of the “**Severity Index**” may be obtained from MGMI, Headquarters, Kolkata.

14) Prof. S. K. Bose Memorial Award for excellence in Teaching in Mining Engineering 2018 –19 :

Any Teacher of Mining Engineering or allied Engineering having long teaching experience (at least **20 years** of service as teacher out of which **10 years** in senior capacity (e.g. Opencast Mining, Mineral Processing, Rock Mechanics, Mine Environmental Engineering, Mine Surveying), in a reputed Engineering College namely e.g. **IIT, ISM (Dhanbad), BHU, IIT (KGP), IIST (Shibpur)**, will be considered for the Award for his/her achievement of excellence in teaching of Mining Engineering based on the following criteria:

- a. **Excellence in Teaching;**
- b. **Kind and amiable disposition;**
- c. **Unimpeachable integrity;**
- d. **Keen interest taken in the overall welfare of his Students;**
- e. **Helping the poor and needy students;**
- f. **Refrain from competition for Money, Power, Fame etc;**
- g. **Acing as source of inspiration full of lofty human qualities of simplicity, humility, generosity and unselfishness.**

15) Coal India Project Implementation Trophy 2018 –19 :

The Honorary Secretary, MGMI invites nominations for award of Trophy from the

Companies dealing with projects concerning production of coal or lignite. Nomination to be sent on each category for the award mentioned below. These are **(a) Production of Coal, (b) Production of Lignite (c) Coal Washery plant and (d) any Central workshop attached with companies.** The Award will be given to a project of the company and not to any individual. The selection of the project for the award will be decided on quality of design, choice of technology, largeness, complexity, project construction period and its keeping up of time and cost schedules.

16) Prof.(Dr.)Mahendra Pratap Singh Memorial Coal Science Award 2018 –19:

(A Gold plated medal, cash award of Rs.15000/- and a Certificate)

Any person with academic background of Geology/ Geoscience/ Chemistry/ Chemical Technology, who has proven knowledge and has made outstanding contribution in Coal Science mainly in the areas like Coal Characterization, Coal Petrology, Coal Beneficiation and carbonization, Coal Combustion, Clean Coal Technologies (CCTs) including Coal Gasification and Liquefaction and value added material from Coal, during the **last five years** including the current year, shall be eligible for the award.

Each nomination shall be submitted in 07 (seven) copies in proper format together with 02 (two) recent passport size photographs of the nominee (copy of Proforma is available with the Honorary Secretary, MGMI and will be sent on request).

C O N T E N T S

President's Message	3
Editor's Page	4
End of an Era	7
Headquarters Activities	
a. Report on MGMI President's Cup Golf Tournament - 2019	9
b. Condolence Meeting for Late Prof Ajoy Kr Ghose	10
c. Report on Ordinary General Meeting of the 113 th Session	11
Chapter Activities	
a. Bhubaneswar Chapter	12
b. Calcutta Chapter	14
c. Delhi Chapter	16
Book Review	16
Photo Gallery	17
Persons in the News	19
News About Members	21
Upcoming Events	22
News Update	23
Report on Meghalaya Coalmine Mishap - <i>Bibhas Chandra Bhattacharya</i>	34
Obituary	43
Transit House	44

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MGMI Council for 2018-19

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President's Message



MGMI has a glorious history of promoting the scientific study of mining and mineral industries of the country spanning back to around 113 years. I consider it a privilege and honour to have been elected as the President of such a noble Institute. Drawing inspiration from my predecessors my endeavour, along with the entire team of the newly elected members of the National Council, would be to carry out the ideals, values, objectives, culture and convention upon which this great Institute has been founded upon.

I express sincere appreciation to my predecessor, Dr. N K Nanda and other members of the outgoing committee for the invaluable services and contribution they have rendered to the Institute during their tenure. The height that MGMI has scaled today is the result of the commitment of all the past members who have made this body strong and vibrant. The history of their collective contribution should never be forgotten. I feel proud to be a part of that legacy in carrying the flame of MGMI forward along with the newly

elected team. I offer my hearty congratulations to them.

We are now living in a time of ever changing challenges, business dynamics, opportunities, disruptive technologies etc. The focus of the Institute has to be to keep abreast of the changing scenario and organize contextual, topical and tangible result oriented national and international Seminars and Workshops. Adaptability and tuning in to the changing times is of foremost importance.

Let us all together carry forward the spirit of MGMI in fulfilling the expectation of the mining and mineral Industries bestowed upon the Institute with the valued support from all concerned organizations. We should instill in ourselves a sense of commitment and discipline in whatever we do for the benefit the Institute.

I convey my Best Wishes to all the fellow members of the MGMI and their families a Prosperous, Peaceful, and Happy New Year 2019.


(Anil Kumar Jha)

From the Editor's Desk



Towards renovation of mining neighborhood.....

It is often argued that mining is liable to loss of biodiversity, erosion, contamination of surface water, ground water, and soil. Safety, security and health are receiving increased threat from mining in different parts of the world. There are now numerous examples of the erosion of exposed tailing dams, mine dumps, hillsides, and the resultant siltation of natural drainage systems and rivers that affected the neighborhood of mining areas. Mining around farming areas may either destroy or disturb the crop lands or productive grazing lands while in wilderness areas, it can cause either the disturbance or the destruction of ecosystems.

Responsible mining operations in principle have declared policy for the protection of land, water, and air. Though India had the traditional philosophy of respect towards nature and worshipped river, trees, hills and forests, but business interests overpowered and damage to the nature caused by industries including the mining industry were rampant particularly during the last five decades of the last century. The permit system, licensing process and inspectorates were only witnesses of damages to the environment.

The mining areas and communities living in the neighborhood had always a poor story to tell. One may recall the conditions of the Ranchi Ramgarh Road or the road from Saibacha to Barbill mining fields or the road from the iron ore mining belt to the Paradeep port when there were iron ore mining

booms. The pot-hole scattered road used to release dusts and inconvenience to a large population. Thanks to some of the recent initiatives that road connectivities have improved in the last 20 years. However, mining areas are still considered as revenue generating and wealth source, but not for building wealth based sustainable development epicenter. Modern hospitals, universities and planned urbanization and transport and communication links were never in the state governments' plan. Indian modernization were city based and for decades after Independence, we had only additions and expansions of the few metropolitan cities, by which many of the areas of those cities and towns became unfit for decent living.

The coal mining area had unplanned habitation and miners accommodation for the need of low capacity mines. After nationalization and the advent of surface mining larger mining projects and satellite township concepts came in. However, integrated sustainable residential area and amenity planning did not take a proper shape. There are very few places similar to Tatanagar or Neyveli. We do not have any mining city with proper university, medical college or professional development centers. Some ventures have taken during the last decade and after the Company's Act 2013 stipulated CSR expenditure now some initiatives are visible. The impacts of these initiatives and utilization of the District Mining Funds are yet to be seen. The Compensatory Afforestation Management and Planning Authority (CAMPA) and the Compensatory Afforestation Fund (CAF) were formed

long back and about Rs 39000 crore is lying in that fund but never used for effective development of our forest, forest dwellers and development of the mining areas and communities around mines. While coal mining companies are spending on dustbins and toilets for the railway stations in India from its CSR funds, there are hardly any facilities in the mining neighborhood to educate the people of the risk of pneumoconiosis or silicosis of the villagers or online display of how much they are exposed to Cr⁶⁺ or acid mine drainage from any contaminated water body. Measures taken to assess the effect of mining dusts on the yield of agricultural fields in the neighborhood of mining are hardly disseminated to the common people and farmers. No modern city, scientific laboratory or coveted educational institute exists in Indian mining belts. Establishments to bring scientists, doctors, academics near to the interior areas with concentrated mining activities were never on our national or state agenda.

The district administration plays a key role in modern India. However, there is perhaps no comprehensive asset management division in district administration. Every district has Block Development Officers. However, they hardly have district asset register or Remote Sensing and GIS based asset management system. The mineral resources, roads, rivers, hills, villages, agricultural fields, water bodies are important assets of a district contributing to the national wealth. For proper utilization of the CSR funds of the mining companies and the DMF, the District administration must have an Asset Management Cell to develop an asset register and resource planning urgently for proper asset utilization and to bring out a system to asset developments in mining areas. District administration must adopt a policy similar to the industry for implementing ISO 55000:2014 or IS 15363:2003. More constructive interactions of mine management and the district administration would be necessary in near future.

District administration needs to develop planning activities in the mining and neighboring districts for regional developments. It is important for the mining

company to keep certain activities aligned in collaboration with the district administration, particularly to:

- ◆ Provide the required contents for a reclamation plan that has a bearing on the neighborhood
- ◆ Provide a clear list of intended actions necessary to comply with annual activities and where required as part of the operations or final reclamation;
- ◆ Guide site development consistent with the approved plan, and to assist in regulatory compliance for operational activities as per regulation
- ◆ Manage compliance with the approved plan
- ◆ Provide a set of actions to be taken if the mining operation were to become idle, consistent with specified reclamation actions during operations and consistent with the final reclamation plan should the operation close.

CSR guidelines of India clearly say that 80% of CSR funds of mines should be spent within 25 km of the operational areas. The rationale for local communities to receive a greater share of the benefits is quite clear. The communities accept mining on their doorstep facing all odds. Therefore, they must see some realizable benefits over and above being compensated for loss or other impacts. Moreover, for mining to contribute to the goals of sustainable development at the community level, it must provide a net benefit to the affected community. By fundamental concerns it is accepted that sustainable development requires an equitable sharing of benefits; if there is obvious inequity, there will be conflict, which obstructs the development process. Therefore, through CSR activities the share of benefits received by communities should be more. However, some nationalistic planners oppose such concepts, however, there opinions must be assessed with the historical national development planning and plan implementation in the interior rural areas.

While looking towards renovation of mining neighborhood, sustainable development at community development must be seen as integrated efforts to effective utilization of various means of sustainable developments in multiple areas as shown in the Box and more emphasis should be towards institution building and institution strengthening:

Means for Sustainable Development at the Community Level

Resources – quantity, quality, access to them, and realizable value

Physical resources

- Land, natural resources, and environmental services
- Productive equipment to make use of these services
- Infrastructure (especially safe and secure shelter, water supply and sanitation, education, energy, transport, communications)

Financial resources

- Income
- Savings, investments, and credit

Human resources

- Health, safety, and security
- Skills, knowledge, and qualifications
- Jobs and other economic strategies such as migration/remittances and subsistence activities

Information

- Information about technical/policy/market opportunities and obligations
- Information about change

Community values and knowledge

- Shared values, norms, goals, and aspirations for sustainable development
- Community knowledge of society, environment, and economy and their interaction
- Associated social traditions (history, culture, religion)

Community institutions

- Community governance institutions, mechanisms, rules, and sanctions – for participation in problem and opportunity

assessment/ debate/ communication/ consensus/ conflict management/ decisions/ self-help/ joint work/ learning and innovation/ social security/ cost-benefit sharing/ vigilance and monitoring/ accountability

- Legitimacy and reputation of the community and its institutions
- Trust, leadership, membership, management of community groups, federations, networks
- Internal relations/partnerships within the community, such as gender/ethnic relations
- Relations/partnerships with other communities, actors, and service providers
- Other means to seize opportunities, manage risk, and improve resilience

Individual and community powers

- To negotiate with bureaucracy and private sector
- To influence politics, policy, laws, and instruments
- To influence market conditions
- To plan/control developments and activities in the vicinity
- To express community needs, ideas, and choices

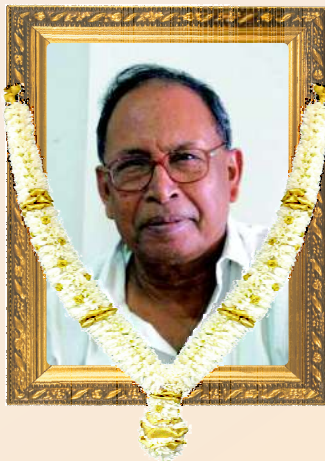
Individual and community rights

- To claim, receive, defend, transform, and trade material and financial assets
- To information
- To representation and engagement in processes (political, policy, legal, market)
- To development and self-determination

¹ <http://pubs.iied.org/pdfs/G00901.pdf>

End of An Era

(13th April 1934 – 13th March 2019)



Prof Ajoy Kr Ghose

The man who strutted the mining world for close to half a century has finally taken his leave. Prof. Ajoy Kr Ghose, the doyen of Indian Mining Industry, is no more. After suffering from some age related illness that kept him bedridden for a few months at the end, Prof. Ghose breathed his last at around 1.30 p.m. on March 13, 2019, at his residence at Regent Estate, Kolkata.

Anybody who was somebody remotely connected to the mining industry knew his name and learned of his fame spread across the length and breadth of the vast country. Stories and anecdotes of his profound knowledge in mining, his English profundity, his active habits, his enthusiasm and vivacity, his photographic memory and so on abound in the mining world. Whether it was Zawar in Rajasthan or Kiriburu in Singhbhum, Pench – Kanhans Valley beyond Nagpur or Kothagudem and Kudurmukh in the South, his name and fame wafted in the air and spread over distant horizons. Why only India? Talk to a man from the mining academic world in Krakow in Poland or Witwatersrand in South Africa, Yokutcoal basin in Russia or Powder river basin in Wyoming in USA or Haerwusu in

the inner Mongolia Autonomous Region of China – everyone without exception will gape in awe and esteem at the very mention of Prof. Ghose for they must have read his paper in a reputed Mining Journal or heard him speak in an international seminar or conference. Such a peripatetic academician as Prof. Ghose is very rare in any academic discipline of any country. Such was the height that he climbed, the acme of glory that he reached in one single life time ! Literally, the world was his stage.

Ajoy Kr Ghose was born in middle class Bengali family in Patna on April 13, 1934. A brilliant student with scholastic abilities, Prof. Ghose had his early education in Patna and passed the I.Sc examination from Patna Science College in 1952. He graduated in Mining Engineering from Indian School of Mines in 1956 and stood First Class First in his batch. After a one year stint in Meneil & Barry as a Graduate Trainee, he went to U.K. for three years having secured the scholarship of the National Coal Board of that country. On returning to India he worked as a Senior Scientific Officer in the then Central Mining Research Station in Dhanbad. In 1962, he donned the headship of the Mining

Engineering Department of the Regional Engineering College (Now a National Institute of Technology) in Srinagar for four years. In 1966 he joined as a full professor of Mining Engineering in his alma mater, Indian School of Mines, at the young age of 32. After a long and studded innings as professor, he became the Director of the Institute in 1991 and finally demitted office in 1994.

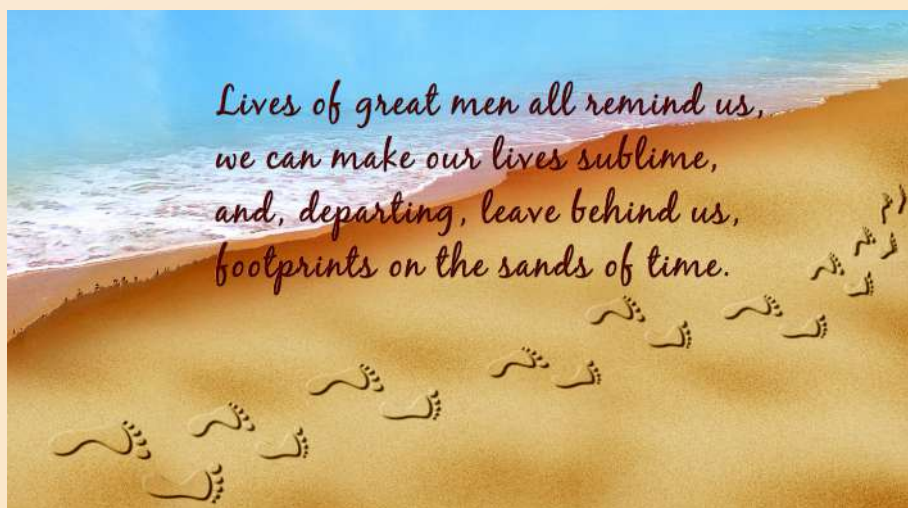
Awards and accolades came on his way with an unfailing regularity. There is not a single coveted award in Indian mining and mineral industry which has not been conferred upon Prof. Ghose. From Dewan Bahadur Thacker Gold Medal to Prof. Jaikrishna Memorial Award of INAE, from National Mineral Award to bestowing upon at Ph D degree, honoris causa, by a foreign University – the list is endless. He was President of The Institution of Engineers (India), President of The Mining, Geological and Metallurgical Institute of India (MGMI). Fellow of Indian National Academy of Engineering, a Foreign Fellow of the Russian Academy of Sciences, a Life Member of the Polish Association of Engineers, to name just few.

Prof. Ghose was a prolific writer and was widely known for his felicity in English. He authored more than 350 technical papers and was long time editor of the Journal of Mines Metals and Fuels and the Indian Journal of River and Power Valley Development. A gifted orator, he was invited by many Universities and professional bodies across, and beyond the shore of the country to deliver Keynote address or lectures in Plenary sessions. In fact, his abilities to enthrall the audience and keep them spellbound for hours was legendary. It will be no travesty of truth to say that his oration was a perfect foil to his erudition.

The contribution of Prof. Ghose to the Mining Industry and academics of the world is phenomenal with his passing away, it appears to his thousand of students and admirers, a generation has come to an end. The void that has been created by Prof. Ghose's leaving his earthly abode will indeed be difficult, if not impossible, to be filled in any foreseeable future. Prof. Ghose left behind his wife, two sons, two grand sons and one granddaughter.

Only his maker might be delighted to get him back.

Amen.



HEADQUARTERS ACTIVITIES

Report on MGMI PRESIDENT'S CUP GOLF TOURNAMENT- 2019

MGMI President's Cup Golf Tournament was held on 17th February, 2019 at MCL Golf Club, Sambalpur 768 018. Shri RR Mishra, CMD, MCL and his team made excellent arrangement for visiting Golfers. MCL Golf Club Course has its own character and course is challenging. 33 golfers participated. 19 were from MCL, rest were outsiders.

The seed which was planted by Shri SN Sharma, Former CMD, MCL has blossomed into a full tree and has become a cradle for learning Golf. Hopefully, MCL will continue to support this event in the years to come. MCL Golf course is improving every year. With the installation of irrigation facility, it is felt that in not too distant future, 'preferred lie' will be done away with. Golfing will then, be more enjoyable.

Dr RN Sharma, a young Golfer of 95 years graced the occasion with his presence. He played 18 holes without the Golf cart. We are sure he will complete his century on the Golf course & every member of MGMI Golf community will be a part of this great event. Next year will be his 30th year of participation in this tournament.

MGMI is thankful to its Patrons & Advertisers. Without their support this event could not have been held. We missed the presence of Shri Anil Kumar Jha, President MGMI.

All this has been made possible by the unstinted help, cooperation and guidance from all fellow golfers.

The Winners of 2019

CHAMPION	Shri S Sharma
2nd Best Runners Up	Shri Vikash Jain
Best Gross	Shri J Kumar
Best Stableford Score	Shri Anil Singh
Best Outstation Player	Shri OP Killa
Best Net for Senior Golfer	Shri RN Sharma
Best Net for Senior Golfer (9-Hole)	Shri JP Goenka
Nearest to the Pin	Shri Deepak Kumar
Longest Drive	Shri TK Banerjee

MGMI 2019 Appreciation Award

- 1) Shri S Trehan
- 2) Shri KP Kapai
- 3) Shri SK Lal
- 4) Shri CK Mohanty

Rookie of the year Award

- 1) Shri Pappu Kr Singh
- 2) Shri Bhagat
- 3) Shri RKP Reddy

PUN AT GOLF

A good golf partner is one who's always a little bit worse than you are.

Golfer: Please stop checking your watch all the time, it's distracting!

Caddie: This isn't a watch, sir, it's a compass.

The only problem with golf is that the slow groups are always in front of you and the fast groups are always behind you.

Condolence Meeting for Late Prof Ajoy Kr Ghose

Prof Ajoy Kr Ghose, Past President, MGMI, a jewel among the contemporary Mining Engineers in Asia left us for heavenly abode at Kolkata on Wednesday, the 13th March 2019 around 1.30 p.m.

A Condolence meeting was convened on Saturday, the 23rd March, 2019 at 2.45 p.m. at MGMI Bldg., Salt Lake, Sector-V, Kolkata – 700091 to pay respect to the departed soul.

Shri Ranajit Talapatra, Hony. Jt. Secretary readout a brief note about late Prof. Ajoy K Ghose and he mentioned that Prof. Ajoy K Ghose, is the Mining Guru who born on 13th April 1934 and expired on 13th March 2019 afternoon at his residence.

Around 25 persons attended the Condolence meeting. Among them he requested Shri L K

Bose, Shri Smarajit Chakraborty, Shri R K Saha, Shri Prasanta Roy, Prof. Khanindra Pathak and Prof. N C Dey and others to speak few words on late Professor Ghose and also requested them and others to offer flowers to the portrait of Prof. Ghose to pay respect. All of them spoke about late Prof. Ghose from different angles, most of them mentioned that he was not only an academician, but philosopher and guide for the Mining Industry all over the globe. Prof. Ghose was an excellent humanitarian and noble person. He was popular amongst students, colleagues and research communities.

Prof. Ghose left behind his wife, two sons, their wives, grand sons and grand daughter. He would be remembered for ever as a legend.

IN LOVING MEMORY

*“People will walk in and walk out of your life,
but the one whose footstep made a long lasting impression
is the one you should never allow to walk out.”*

- Michael Bassey Johnson

REPORT ON ORDINARY GENERAL MEETING OF THE 113TH SESSION

The Ordinary General Meeting (OGM) of the Institute was held at the Headquarters Bldg., of MGMI, at GN 38/4, Sector V, Salt Lake, Kolkata 700 091 on Saturday, the 23rd March, 2019 at 3.30 pm.

The OGM attended by S/Shri R K Saha, Smarajit Chakrabarti, L K Bose, Prasanta Roy, Prof Khanindra Pathak, Ranajit Talapatra, Prof N C Dey, Anil Karmakar, Anup Biswas, Shakil Hassain, Shaurav Kumar, Tapas Kumar Dey, Ms Tuli Bakshi, Shibaji Dey and Sumit Banerjee.

The Honorary Jt Secretary, Shri Ranajit Talapatra, extended welcome to all the Members, Speakers and Guests present. Shri Talapatra proposed the name of Shri Smarajit Chakrabarti, a senior member of MGMI and former CMD, ECL to Chair the Session. The proposal was seconded by Shri Prasanta Roy. Shri Smarajit Chakrabarti took the Chair and welcomed to the Speakers, Council Members, Members and Guests. The Chairman thereafter took up the Agenda items and requested the Speakers to present their papers one by one. He also advised the Speakers to present their papers first, preferably within 10 minutes and thereafter participants may raise question, if there be any.

The following six papers were scheduled for presentation:

i) **“Reliability and availability analysis of a Continuous Miner Machine in an Indian Underground Coal Mine”** by Shri Sumit Banerjee, Prof N C Dey -IEST, Shibpur. This paper was presented by Shri Sumit Banerjee and complimented by Prof. Dr. N C Dey.

ii) **“Geomorphic Indicator Model for Identifying Manganese Mineralization”** by S/ Shri Shaurav Kumar, Tata Steel Ltd, Asim Chatterjee, Dr Rajesh Mukherjee, Rajib Deb and S Ainampudi. This paper was presented by Shri Shaurav Kumar.

iii) **“Laboratory Measurement of Permeability of Argon and Carbon-di-Oxide in Coal”** by Ms. T Bakshi, Prof K Pathak, Prof B K Prusty and Prof S K Pal. This paper was

presented by Ms. T Bakshi and complemented by Prof. Dr K Pathak.

iv) **“Assessment of Occupational Stress Variability (OSV) of Deep Underground Miners Including Estimation of Skeletal Muscle Force, Fatigue, and Its Recovery Testing By Hand-Grip Dynamometry (HGD)”** by Shri Shibaji Dey, Doctoral Scholar, IEST and Prof N C Dey. This paper was presented by Shri Shibaji Dey and supplemented by Prof. Dr. N C Dey.

v) **“Development of a GUI Based Software for Surface Deformation Mapping through DinSAR Processing : An Indian Coal Mine Context”** by Tapas Kumar Dey, Prof Biswajit Manna, Debashish Chakravorty, Biswajit Samanta and Arundhati Misra. This paper was presented by Shri Tapas Kumar Dey.

vi) **“Comparison of Efficiency of use of Polyurethane coating of Hydrotransport Pipelines and Steel Pipelines on the basis of Parameters of Abrasive wear”** by Prof Alexandrov, Saint-Petersburg Mining University and Prof. Maria Vasilyeva. As Prof Alexandrov could not personally manage to come from Petersburg for presentation, so the paper could not be presented before the audience.

There were lively discussions on the papers as presented. The Chairman appreciated Speakers for their works and valuable contribution. However, some questions were raised by the members and the questions were adequately clarified by the Speakers. The Chairman, Shri Smarajit Chakrabarti while summing up, thanked the Speakers especially to Shri Shaurav Kumar for taking the trouble of coming all the way from Jamshedpur. He also thanked the participants to take part in the discussions.

The Honorary Jt Secretary, Shri Ranajit Talapatra while giving vote of thanks, he mentioned that the papers presented in the OGM will be printed in MGMI Transactions. The papers presentation Session ended at 5.45 pm.

CHAPTER ACTIVITIES

Bhubaneswar Chapter

The Council Meeting of Bhubaneswar Branch was held on 22 February 2019. After confirmation the last meeting held on 18th April 2018, balance sheet of the year was discussed. With a positive balance of Rs 12070 in bank, the Branch has sorted out an action plan for 2019, which include:

- (a) To organize a COUNCIL Meeting for special paper readings/Discussions
- (b) To organize a Seminar of 2 days duration in association with IE(I)
- (c) To make necessary arrangements for Advertisements for MGMI activities, Chairman shall explain the position, and also to receive the 25% of Membership fees from MGMI-HQ
- (d) To initiate MEMBERSHIP DRIVE by members to ensure at least 3 no from each area like (Gandhamardan/JK Road/South Kaliapani/KIORA Region/Angul REGION/ Regional Office-RAYAGADA & OMC HO. It is desired that all COUNCIL members must put efforts continuously and try for ONE MEMBER ADDITION EACH.

Further the following matters were discussed:

Renewal of Membership- as most of MEMBERS are for ONE YEAR DURATION ,EFFORTS must be made for extension of

duration/Life membership by issuing letters/Mails immediately, Hony Secretary has to make a vigorous DRIVE for this. Shri Khuntia had sent many e-Mails/WA messages /spoke on phone to them all / besides WhatsApp messages. Received cheques from some Council Members whose renewal of fees to be done immediately. Efforts should be made in this exercise continuously

MGMI HQ has also requested branches to furnish details of technical activities of Branches/No of Papers presented/no of Membership added /Balance Sheet & audit of Accounts etc. Shri Khuntia has advised Shri Manas Ranjan Mishra, Cost Accountant for AUDIT of Accounts/Balance Sheet preparation. As payment transactions were very less, this will be done quickly.

SPECIAL PAPER READING

The following papers were read:

- (a) By Shri JP Panda ---India can meet Total Coking Coal requirement by JHARIA COAL BASIN APPROACH
- (b) By Dr S K Biswal HOD, Mineral Processing Dept, IMMT (B) **Maximise the Recovery of Iron Values from Lean and Low Grade Iron Ore Resources**

The meeting ended with Vote of Thanks by Hony Secretary Sri DK Mohanty.

Bhubaneswar Chapter

The Council Meeting of MGMI Bhubaneswar Chapter was held at 4.00 PM on 25.03.2019 in the Committee Room of the Institution of Engineers (India), Odisha State Center, Bhubaneswar.

Before taking up the agenda points a Condolence meeting was held with one-minute science of all members present in the memory of Late Prof Ajoy Kr Ghose, Former Director, ISM and President, IEI & MGMI, Chairman, Indian National Committee, World Mining Congress who left for his heavenly abode on 13th March 2019 at his Kolkata residence.

Agenda Points were as follows:

1. Confirmation of Council Meeting held on 22.02.2019
2. Bank Balance & some Fund Raising Matter
Bank Account Status:
 - (i) Balance - Rs 11952/- as on 22.03.2019
 - (ii) Printing of a Journal with Advertisement of M/s Bhusan Power & Steel for Rs 20000/- is yet to be printed.
3. Plan of action for 2019 to be pursued
 - (a) It was proposed to organize Council Meeting and special paper presentation in quick succession and not less than 2 months intervals. It has been decided that the Council Members of IEI, OSC shall be invited in the paper presentation sessions.
 - (b) An "All India Seminar organized by the Institution of Engineers (India) on "New Steel Policy of Govt of India -2030, Status of Steel making & Raw materials Resource Development, Constraints of Mining Engineering Division of IEI, OSC, Bhubaneswar" which was organized on 26.10.2018 & 10.11.2018" with a fairly good success where MGMI Bhubaneswar Chapter involved as collaborator.
 - (c) It was discussed that some efforts would be necessary for getting some Advertisements for MGMI activities. Chairman had also explained the position, there were some dues to receive, 25% of Membership fees, from

MGMI-HQ. Reminder to be send to the concerned members.

- (d) The Chapter has received financial help by Advertisements from "RENTAR, Pune/USA-25000/ (INR) & OMC-25000/(INR) for Paper presentation promotional activity.
 - (e) Further efforts would be necessary for Membership Drive and the Chairman is persuading. It was desired that all Council Members must put efforts continuously and try for One Member each by Addition.
4. (a) Application have been received from Sri JK Hota, Dr DS Rao, ,Chief Scientist , RRL(B),. and Dr C Eswarsaih, Scientist and assured few more applications will come from RRL(B).
 - (b) It was unanimously agreed that Dr DS Rao, Chief Scientist ,RRL(B) & Sri JK Hota shall be Co-opted in MGMI Bhubaneswar Chapter Council and they have invited for Council Meeting
6. Renewal of Membership - Most of the Members are for One Year Duration, efforts must be made for Life Membership. The Hony Secretary has been authorized to do the needful. The Chairman also putting efforts on this. Subscription due from Members to be collected as early as possible and efforts to be made continuously.
7. Details of Technical Activities of the Chapter, number of Papers presented, number of Membership added, Balance Sheet & Audited Accounts etc. to be furnished by 26th March 2019 to HQs.
8. Special Paper Presentation -
 - (a) Sri G S Khuntia, presented a paper on Developing Mechanized/Semi mechanized Mines by outsourcing through - MINE DEVELOP-MENT OPERATOR CONCEPT on long term period, say 20-25 years.
 - (b) Sri Nitin Patankar from Pune presented a paper on RENTAR Fuel Catalyst for Fuel Efficiency by HEMs in Opencast Mines.

Meeting ended with Vote of Thanks by Shri D K Mohanty, Hony Secretary, MGMI - Bhubaneswar Chapter.

Calcutta Chapter

Annual Get-together 2019

MGMI Calcutta Branch, known for its unique activities, apart from time to time organizing workshops / seminars, lecture sessions on topical techno-scientific issues, makes conscious efforts to promote interaction amongst its members and families. This year, the regular annual event of the branch, 27th Annual Get-together of families of the members was held on 20th January 2019. It was arranged at Green Valley Resort, **Dingelpota, Sonarpur, 24 Paraganas (S), West Bengal.**

There were sports items for all age groups. For children, the items for different age groups, were, short Races, Roll the ball in the Basket and Hit the target. For ladies, it was passing the ball and, for men, Hit the wicket. Most participants took part in the items joyfully, the

elders watching their junior family members enjoying heartily. The game of Housie was a key attraction where almost everyone took part. Friends, colleagues, alma maters, professional acquaintances and their families remained engrossed the whole day in 'Jamati adda' (chatting).

Prominent MGMI members who took part in the get-together were – S/Shri L.K. Bose, Founder member of the branch, Prof.S.P.Banerjee, Prasanta Roy, Immediate Past Secretary, MGMI, , S.K. Chowdhury, Former Controller General, IBM, , Prof.N.C.Dey ,Prof. S. Mukherjee, Surya kr. Gangopadhyay, S.R. Panja and Bijan Saha. Calcutta Branch expresses sincere thanks to all the participating members for making the event a grand success.

Workshop on 'State of the Art Geophysics for Exploration of Mineral, Energy and Groundwater Resources' on March 26 – 27, 2019

Calcutta Chapter of The Mining, Geological, and Metallurgical Institute of India (MGMI) in collaboration with The Geological Survey of India Retired Scientific Officers' Welfare Association (GSIRSOWA) and Indian Museum, Kolkata organised a workshop on 'State of the Art Geophysics for Exploration of Mineral, Energy and Groundwater Resources' on March 26 – 27, 2019 at GSI campus, Kyd Street, Kolkata - 700016.

It focused to enhance the level of interaction between experienced geoscientists and key players in mining and other industries for greater appreciation of the role of geophysics in the exploration for mineral, coal, lignite, oil & gas and groundwater resources and also in the fields of urban planning and environmental assessment.

Simultaneously with the Workshop, an

exhibition was arranged at the Asutosh Centenary Hall of Indian Museum. At the exhibition, modern instruments used for geophysical exploration were exhibited and demonstrated by GSI, ONGC, Aimil Ltd, Chrisvin Geomet Services Pvt. Ltd, Chennai. In addition, GSI displayed samples of minerals, rocks and fossils for the benefit of students.

At the inaugural function, MGMI was represented on dias by Immediate Past Presidents Dr. N. K. Nanda, Director (Tech), NMDC, Dr. Ajay Moitra, Chairman, Calcutta Chapter and Shri Bhaskar Chakrabarti, Hony Secretary, Calcutta Chapter. Others present in the occasion were S/Shri R. K. Saha, Past President, S. R. Panja and Raj Narayan Biswas, Vice Chairman, Calcutta Chapter. The Chief Guest of the function was Dr Dinesh Gupta, Director General, GSI, who could not

attend due to open heart surgery. GSI was represented by Additional Director Generals S/Shri S.N. Meshram, R.S.Garkhal and Dr. S. Raju. Dr.Rajesh Purohit, Director represented Indian Museum. Guest of Honour in the occasion was Prof. B.B. Bhattacharya, President, Indian Centre for Space Physics, Former HoD, Applied Geophysics& Former Director, IIT(ISM).

Delegates from GSI, CMPDI, ONGC, MECL, NMDC, CGWB, HCL and private companies participated in the workshop. Faculties interacting with the delegates were from organizations, institutes and academia like GSI, ONGC, IIT Kharagpur, IIT (ISM), Dhanbad, Jadavpur University, OIL and Vedanta Limited.

There were 5 technical sessions where 16 lectures were presented by faculties followed by interactions. The workshop highlighted the recent trends in Geophysical exploration. Earthscience has a large database and increasing use of geophysical methods for solution of geological and geotechnical problems have evolved over the years although in the initial days geophysics was concerned with the application of principles of physics to the study the shape of the earth, geomagnetism, seismology and radioactivity.

The emergence of the Geophysics discipline saw the growth of the methods as a viable alternative where surface geological manifestations are absent. The lectures encompassed all the geophysical application methods that are available to date, starting with gravity, magnetic, and self-potential. Thereafter resistivity, electromagnetic, seismic, MT, AMT, GPR methods evolved. These methods mainly target bodies with density, susceptibility, conductivity and acoustic impedance contrast at depth. Its application in the search for coal and lignite, oil and gas and groundwater has been covered in the workshop. Well logging as a tool in mineral exploration has been covered as well.

The application of geo-electric methods in solving groundwater and saline/brackish water

boundary delineation has also been covered. The role of geophysics in solving geo-technical and engineering geology problems has been discussed. The environment study such as coal fire detection and mitigation also came up for discussions. As a modern technique micro-earthquake studies and its application in planning oil and coal production has been covered.

Airborne-geophysics as a modern method for fast coverage has been discussed and the case studies of its applications in the vast areas of mineral prospective zones have been presented. Airborne geophysical surveys for diamond, base metal, gold and uranium exploration in target areas were discussed. Highlights of National Geophysical Mapping Project (large scale gravity magnetic mapping) and airborne survey maps were also cited.

Hydrocarbon prospecting in the Bengal Basin was covered. Utilization of micro-seismic monitoring in oil reservoir area to increase production and in mining areas to know the underground stability was suggested. An overview of the structural evolution of Northern Assam featured in the workshop.

Saline water intrusion in to the fresh water aquifer is a serious problem having the potential of spoiling the entire inland ground water system in the coastal areas. To avoid this, it was suggested to minimize and control the random and excessive use of ground water especially in the coastal region. Study of GRACE satellite mission data and associated ground observations raised a serious alarm for the rapid depletion of ground water resources in the Eastern and Northern India and it was recommended to further restrict the ground water use for irrigation by reducing pumping time in rural areas.

The workshop concluded with a session on Panel discussions, where delegates and faculties took active parts.

Doordarshan Kolkata telecast moments of the event in their afternoon and night news coverage on 26 March, while Bengali newspaper *Bartamaan* published a short article in the next day's paper.

Delhi Chapter

Paper Meet

MGMI Delhi Chapter has been organising Paper meetings on Technical subjects; recently a Technical Presentation was made by Dr. O.P.Mishra at the JCO Club, Defence Colony New Delhi pm on Saturday, 16th March, 2019 at 6.30 pm.

Dr. O.P. Mishra is a Fellow of National Academy of Science of India (F.N.A.Sc.) for his pioneering work involving Applied Geophysics / Seismology / Disaster Risk Management. Presently, he is working with Ministry of Earth Sciences as senior Scientist-F / DDG. He obtained M.Sc. Tech degree from IIT (ISM)-Dhanbad; Ph.D & D.Sc. from Geodynamics Research Centre, Japan; M.B.A in Finance AIMA, New Delhi.

Dr. Mishra made a very comprehensive but very interesting presentation on the topic

"Seismic tomography and efficient tool for diverse Geo-scientific studies".

Members along with their spouse of MGMI Delhi Chapter were cordially invited to attend. We had a gathering of over 60 persons of which more than 20 ladies graced the function with their colourful presence. The lecture was attended by the ladies too, Dr. Mishra made this technical paper so very enjoyable, laced with lot of humour that ladies were captivated and enjoyed the presentation very much. The lecture was attended by Prof. R.K Verma, former HOD, Geophysics, IIT (ISM). Prof Verma, at the age of 91, with sharp mind gave very crisp technical comments at the end of the excellent presentation made by Dr. O.P.Mishra.

The Presentation was followed by very nice sumptuous dinner.

BOOK REVIEW

The book on Electrical Engineering for Mines and Industries written by Prof. Bibhas Kumar Mukherjee, Assistant Professor at Ideal of Institute of Engineering, Kalyani and a Senior Faculty in Institute of Miners' and Metalworkers' Education, Kolkata.

In this book, it has made an attempt with simplified language the significant

development and advances made in the field of mining industries which can be mostly understood and for better and logical presentation in their work fields. In addition, this book may be a very useful guide to Electrical Engineers of underground and opencast mines. This book is suitable for interview and viva-voce of Degree and Diploma Engineers.

Price : Rs. 200/-

Book is available at :

LOVELY PRAKASHAN
Hirapur, Dhanbad – 826001
Jharkhand
M : 9835390132 / 7352212003

GITA BOOK STORES
Chanda, PO. – Kaliphari
Dist (West) Burdwan (W.B)
M : 9732129257

PHOTO GALLERY



MGMI President's Cup Golf Tournament - 2019



**Releasing Souvenir brought out
in connection with Golf Tournament**



**Condolence Meeting for
Late Prof Ajoy Kr Ghose at MGMI Headquarters**



**A view of the Paper presentation during
Ordinary General Meeting on 26.03.2019
at MGMI Headquarters**



**A view of the Paper Meet at
Delhi Chapter on 16.03.2019**



**Dr O P Mishra, Fellow of National Academy
of Science of India (F.N.A.Sc.) presenting
his paper in the Paper Meet at Delhi Chapter**

PHOTO GALLERY

CALCUTTA CHAPTER

Annual Get-together 2019



Workshop on 'State of the Art Geophysics for Exploration of Mineral, Energy and Groundwater Resources'

GSI campus on 26.03.2019



Inaugural Session at GSI campus on 26.03.2019



Dr NK Nanda, Past President, MGMI delivering the Inaugural Address.



Dr A K Moitra addressing in the workshop.

PERSONS IN THE NEWS



Shri K K Mishra
Director
(Technical / Planning & Design),
CMPDI

Shri Kaushlendra Kumar Mishra has taken over as the Director (Technical / Planning & Design) of Central Mine Planning Design Institute (CMPDI). He was the General Manager (Mining) Piparwar area, Central Coalfields Ltd. before taking over as Director (Technical / Planning & Design) of CMPDI.

Shri Mishra started his career in the Coal Industry from Amlai Colliery of South Eastern Coalfields Ltd. in the year 1985 and served in various capacities, advanced progressively and held different responsible positions in Central Coalfields Ltd., Mahanadi Coalfields Ltd. & South Eastern Coalfields Ltd. He has also visited Australia in connection with Technology Cooperation with CSIRO.



Dr. Prabhakar Sangurmath
General Manager (Co-ord),
Hutti Gold Mines Ltd

Dr. Prabhakar Sangurmath is presently General Manager (Co-ord), Hutti Gold Mines Ltd, Kamataka. He is M Sc (Appl. Geology) and Ph D from Kamataka University. Dr. Sangurmath is a Life Member (LM-10033, 2011-12) of MGMI. In recognition of Dr. Sangurmath's excellent performance and outstanding contributions in Gold Exploration, Mining and related R & D, he has been conferred with several accolades such as "National Mineral Award" from Ministry of Mines, Govt. of India. In recognition of his outstanding service to the Indian Mineral Industry, MGMI awarded "John Dunn Medal 2017 - 18 to Dr. Sangurmath.

PERSONS IN THE NEWS



Shri BN Shukla
Director (T/CRD), CMPDI

Shri B. N. Shukla (DIN 05131449), graduated in 1982 from I.T. BHU and did M. Tech in Opencast Mining from Indian School of Mines, Dhanbad in 1989. He is silver medalist at B. Tech and M. Tech level and was popular students' leader.

He joined SECL in 1982. He joined as Sub-area Manager of Behraband U/G mine having modified continuous miner with LHD and the mine was adjudged the overall best mine in group 'A' of SECL along with 36% growth in production. He was posted as Project Officer, Balram OCP to sort out the R&R problem and poor geometry. The mine bagged 1st prize in overall annual safety week for successive two years.

During his tenure departmental drilling saw highest ever growth in volume of about 52000m. He was instrumental in getting CMPDIL notified under section 4(1) of MMDR 1957 for prospecting any mineral which is a landmark in the history of CMPDIL.



Bhola Singh
Director (Technical), CCL

Shri Bhola Singh has joined as Director (Technical), CCL on 15th Jan 2019. Born in January 1964, Shri Singh completed B.Tech. (Hons.) in Mining Engineering from IIT, Kharagpur.

Before joining at CCL, Shri Singh was Project Director at Reliance Power's prestigious Sasan Power Limited having the distinction of being the country's first Ultra Mega Power Project (6X660MW) catered through India's biggest and highly mechanized coal mining setup at Singrauli. Being at the helm of the affairs, Sri Singh was responsible for delivering coal targets both qualitatively and quantitatively. During his stint, Sasan Project touched new benchmarks and got prestigious National Safety Award from the Hon'ble President of India in 2017.

Central Coal fields Limited is going to be immensely benefitted from the technical expertise of Shri Singh. He is poised to take the organization in the most profitable direction and position of excellence through his leadership skills, open communication, teamwork and positive approach.

News about Members

Shri Satyendra Singh (10226-LM) is now at D-19, Nigahi Colony, Nigahi PO, Nigahi Dist., Singrauli, MP 486 884, (M) 9424368480 email: smsdncl@gmail.com

Shri Sujit Sarkar (8567-LM) MMGI is now Project officer, Tara East & West Coal Mine, Curulia Pashcim Bardhaman is at 157/J, PGH Sha Road, Jadavpur (Behind Jadavpur Girls High School), Kolkata 700 032

Shri Anupam Nandi (9549-LM) MMGI is now Regional Controller of Mines, Indian Bureau of Mines, 318/B, Road No 3, Ashok Nagar, Ranchi 834 002 (M) 94459 56869 email: ro.ranchi@ibm.gov.in

Shri Shivaji Gupta (8655-LM) MMGI is now Director and H. O. O, Central Headquarters, 27, J. L. Nehru Road., Kolkata 700016 email: gupshiv@yahoo.co.in

Shri Alok Kumar Verma (10152-LM) MMGI is now at House No.- K 3B, K Block, Saket, New Delhi - 110 017, M: +91 9007170900 E: alokverma234@gmail.com

Shri Santanu Moitra (3678-LM) MMGI is now at Flat No 602, Neel Siddhi Enclave, Plot No 48/9, Sector -14, Vashi, Navi Mumbai -400705 Email: k.shruti@fugro.com

Shri Sushil Kumar Nandy (5226-LM) MMGI is now at 1201, Mayflower, Hiranandani Meadows, Off .Pokhran Road -2, Thane (West) – 400610, Maharashtra (M) 9819369768, email: nandysushil@gmail.com

Shri Sudhir Kr Mukherjee (5623-LM) S/O Bhupendra Nath Mukherjee, Exotica 3rd Floor, Flat no.3D, 242 MB Road, Pathanpur More, North 24 Pgs, WB 700 049 email: saradindumukherjee5@gmail.com

Shri K K Khati (9157-LM) MMGI is now Chief Manager (Systems), MCL, Jagruti Vihar, Burla,

Sambalpur 768020, Odisha Ph: 9435045612, 9438494261 email:

Shri Gullapalli Buchaiah (9817-LM) MMGI is now Chief Manager, JMS Guest House, 65 Dip Area, Shantikhani, Bellampalli 504251, Dist. Mancherial, State- Telangana email: gbhuma@gmail.com

Shri Ajit Singh Ichhponani (3106-LM) MMGI is now at 34, Gokul Dham Colony, Dhabla Road, Shammgarh 458883, Mandsaur, MP, email ajit_guj@yahoo.com

Shri Chandra Shekhar Singh (10529-LM) MMGI is now at D3, Gadadhar Housing Society, 44B Daramtala Road, Kasba, Kolkata -700042 email: csing.cil@coalindia.in

Shri Satish Kumar Singh (10428-LM) MMGI is now at Dev Public School, Dr. B Bhattacharya Road, Opposite B P Petrol Pump, Patel Nagar, Patna - 800023, Bihar. M – 7004702766 email: satish.singh1955@gmail.com

Shri Sukhanjan Bose, (10785-LM) MMGI is now Senior Consultant (Geology) SRK Mining Services (India) Pvt. Ltd., CE-106, Sector 1, Salt Lake City, Kolkata – 700 064 (M) 98743 53537, email: sbose@srk.co.in

Shri Bipin Bihari Roy (10406-LM) MMGI is now at Flat No C-201, Subal Garden, Near Big Bazar, PO KG Ashram, Dist. Dhanbad (Jharkhand) Pin 826 008 email: bikiran1986@gmail.com

Shri Sudhansu Kumar Sharma (10024-LM) MMGI is now Quality Control Dept., MCL, PO Jagruti Vihar, Burla, Sambalpur 768020 email: sksharma1974@rediffmail.com

Shri Kaushlendra Kumar Mishra (10083-LM) MMGI is now Director (Tech/P&D), Central Mine Planning & Design Institute. Gondwana Place, Kanke Road, Ranchi 834 031, Jharkhand

UPCOMING EVENTS

27 – 29 May 2019, SDIMI Conference 2019, “The 9th International Conference on Sustainable Development in the Minerals Industry”. Venue: Sydney, Australia.

27 – 30 May 2019, “EXPONOR Chile 2019”. Venue Antofagasta Industrial Association Event and Community Activity Ground, Pedro Aguirre Cerda 17101, La Portada Sector, Antofagasta, Chile Contact. Ph: 56 55 24335 Web: exponor@aia.cl

29 – 31 May 2019, “China International Mining Expo (CIME) 2019”. Venue, Beijing, China. For further detailed contact: Beijing, China. For further detailed contact: Beijing Hiven Exhibition Co. Ltd., Donna, C-1809, Wanda Plaza Shijingshan District. Beijing, China, Phone: 0086 18311208242, Email: donna@hwexpo.com Web: <http://www.spire-events.com>

13 – 14 June 2019, “ Zambia International Mining & Energy Conference & Exhibition”. Venue Lusaka, South Africa, Visit <https://10times.com/zimec>

13 – 14 June 2019, AIMS 2019 – 2ND International Conference “Mines of the Future”. Venue : PPS Lecture Hall Building, Prof. Pirlet-Str. 12, For further detailed contact: institute of Mineral Resources Engineering. Mitra Rueland, AIMS 2019, Aachen. Germany, Phone.+492418095673. Fax: +49241 8092272. Email: aims@mre.rwth-aachen.de. Web: <http://www.mre.rwth-aachen.de/>

18 – 19 June 2019, “ Mining Investment Europe”. Venue Frankfurt, Germany. For further detailed contact: Spire Events Pte Ltd., 2019 Mining Investment Europe. Daniel Radziszewski, Speaking, registration & general queries, 24 Peck Seah Street#02-09 Nehsons Building Singapore, Ph: 6567176018, Fax: +65 6717 6015. Email: Daniel.radz@spire-events.com, Web: <https://www.spire-events.com>

16-20 September – 2019, “ PRUMIN 2019”, Venue : Institute of Mining Engineers of Peru, Calle Los Canarios 155 -157 Urb.San Cesar II Stage, La Molina. Peru. LIMA 12, Peru Contact. Web: perumin@iimp.org.pe

06-09 November 2019, 8th IMME-2019. “International Mining, Equipment Minerals & Metals Exhibition”, For further detailed contact: miningexpo@tafcon.com

10 – 11 June 2020. Sustainable Minerals '20 – 6th International Symposium on Sustainable Minerals” Venue Falmouth, united Kingdom. Contact, bwills@min-eng.com Visit: <http://www.min-eng.com/sustainableminerals20/>

NEWS UPDATE

Mineral of the Month

Chromite

Chromite (Cr) is the single commercially viable ore of chromium which is chemically known as iron chromium oxide (Fe Cr₂O₄).



The properties of chromium that makes it most versatile and indispensable are its resistance to corrosion, oxidation, wear and galling and enhancement of hardenability.

Chromium is an important alloying metal in ferrous metallurgy, perhaps next only to manganese. It is used in the manufacture of alloys along with other metals, such as nickel, cobalt, molybdenum, copper, titanium, zirconium, vanadium, columbium and selenium. Chromium is traded primarily as chromium ore or as an alloy of chromium and iron, namely Ferro-chrome or charge-chrome.

The name of the element is derived from the Greek word 'Chroma', meaning colour, because many of its compounds are intensely coloured. It is a steely-grey, lustrous, hard and brittle metal which takes a high polish, resists tarnishing and has a high melting point.

Chromite production and "reserves"	Production		"Reserve"
	2011	2012*	
Totals	23,300	24,000	>460,000
India	3,850	3,800	54,000
Kazakhstan	3,800	3,800	210,000
Other Countries	5,450	5,300	
South Africa	10,200	11,000	200,000

USGS, 2013

RESERVES/RESOURCES

As per NMI database based on UNFC system, the total reserves/resources of chromite in the country as on 1.4.2015 have been estimated at 344 million tonnes with 102 million tonnes as Reserves (30%) and 241 million tonnes as Remaining Resources (70%). More than 96% resources of chromite are located in Odisha, mostly in Jajpur, Kendujhar and Dhenkanal districts. Minor deposits are scattered over Manipur, Nagaland, Karnataka, Jharkhand, Maharashtra, Tamil Nadu, Telangana and Andhra Pradesh.

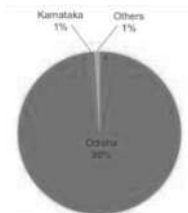
Grade wise, charge-chrome grade accounts for 31% resources followed by beneficial grade (25%), ferro-chrome grade (18%), and refractory grade 14%. Low, Others, Unclassified and Not-known grades together account for 12%

EXPLORATION & DEVELOPMENT

GSI has carried out exploration for chromite in Nagaland during the year 2015-16. Exploration activities carried out by State Governments of Odisha and Karnataka is not available. Ores of nickeliferrous chromite-magnetite occur in the Ultra Basic Belt at Pokhpur in Tuensang district.

PRODUCTION AND STOCKS

The production of chromite was 2,894 thousand tonnes during 2015-16 which increased by 34% as compared to that in the previous year.

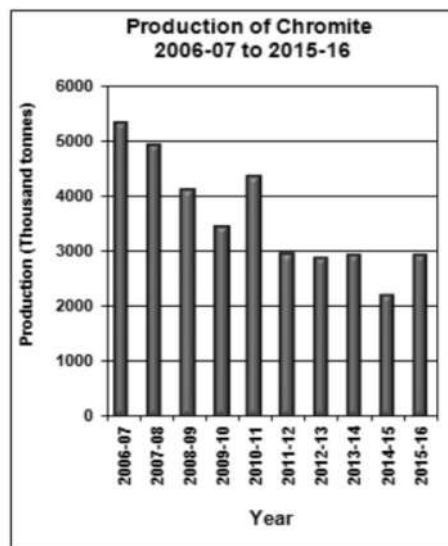


The numbers of reporting mines were 24 in 2015-16 as compared to 26 in the preceding year. Five principal producers operating 17 mines together accounted for 90% of the total production during the year. The contribution of 6 mines, each producing more than one lakh tonnes per annum was 86% of the total production.

The share of Public Sector in total production was 37% in 2015-16 as well as in the previous year. About 33% of the total production was reported from captive mines in the current year as compared to 39% in the previous year. Odisha continued to be the major chromite producing state accounting for almost the entire production during 2015-16 and nominal production was reported from Karnataka and Maharashtra (Tables - 3 & 4). Grade wise analysis of production during 2015-16 reveals that 52% & above Cr₂O₃ fines accounted for 27%, 40 -52% Cr₂O₃ for 38% (Lumps 2% and Fines 36%), below 40% Cr₂O₃ for 22% (Lumps 4% and Fines 18%) and chromite concentrates for 13% of the total production (Tables-5, 6 & 7). Mine-head closing stock of chromite for the year 2015-16 was at 2,532 thousand tonnes as compared to 2,245 thousand tonnes in 2014-15 (Tables- 8A & 8B). The average daily employment of labour in chromite mines during 2015-16 was 6,416 as against 6,772 in the previous year.

Table : Principal producers of chromite (2015-16)

Name & address of producer	Location of mine	
	State	District
The Orissa Mining Corporation Ltd, 'OMC House', Unit 5, Post Box No. 34, Bhubaneswar – 751 001, Odisha.	Odisha	Jajpur
The Tata Steel Ltd, Bombay House, 24, Homi Mody Street, Fort, Mumbai – 400 001, Maharashtra.	Odisha	Jajpur
Balasore Alloys Ltd, Balgopalpur, P.O. Rasalpur, Balasore - 756 020, Odisha.	Odisha	Jajpur
Indian Metals & Ferro Alloys Ltd, IMFA Building, Bomikhal, Rasulgarh, Bhubaneswar – 751 010, Odisha.	Odisha	Jajpur Kendujhar
Ferro Alloys Corporation Ltd, Laxmi Bhawan, Kuans, Bhadrak – 756 100, Odisha.	Odisha	Jajpur



Do you know.....

The Coal Mines (Special Provisions) Act 2015

Immediately after the August 2014 SC decision that held 214 captive mine allocations illegal, the NDA Government brought an ordinance called Coal Mine (Special Provisions) Ordinance. Later, the ordinance was replaced by *Coal Mines (Special Provisions) Act, 2015*.

Salient Features

Objective

The objective of this act is to empower the government to allocate the coal mines on the basis of competitive bidding to ensure continuity in coal mining operations and promote optimum utilization of coal resources.

Schedule-I, II and III mines

All the 204 mines whose allocations were cancelled by the Supreme Court, are defined in the act as 'Schedule-I coal mines'. Out of these, the 42 mines which were already producing and ready to produce coal were defined as 'Schedule-II coal mines'. Other 32 coal mines which are at various stages of development were defined as Schedule-III coal mines. These coal mines are meant for specified end-use and the Central Government has been empowered to move mines from Schedule I to schedule-III.

No end use restriction to participate in the auction

This act provides that there shall be no end use restrictions on the eligibility to participate in the auction, other than for Schedule II & III coal mines, in which mines will be auctioned only for end use in power, steel & cement sectors.

Nominated Authority

The act empowers the Central Government to appoint a Nominated Authority under a person with joint secretary rank to conduct auction/ allotment and vesting and transfer of all interests, rights and titles of these coal mines in the successful bidder. Nominated Authority is assisted by experts and other officers.

Proceeds of auction

All proceeds of auction will be received by the Nominated Authority and, will be disbursed to the respective states. The prior allottees will be paid

compensation for land and immovable infrastructure developed by them prior to cancellation of their allotment. For disbursal of payments, a 'Commissioner of Payments' is to be appointed.

Other provisions

The central government is empowered to appoint custodian(s) for operation and management of the coal mines until they are allocated via auction. The act provides that any dispute shall be adjudicated by the Tribunal constituted under Coal Bearing Areas (Acquisition and Development), Act, 1957.

e-Auction of Coal Mines

By the end of October 2015, the Government has conducted three rounds of the auction of the coal mines. The first two phases of the coal auction for 40 producing blocks were held between February to April 2015. These would fetch the coal bearing states a revenue of Rs. 2. 85 Lakh Crore in a period of 30 years. Both power / non-power companies participated in this auction. The government also conducted a third round of the auction in August 2015 but proceeds were only Rs. 4364 crore because of the legal issues that have tangled the mines put on auction.

In March 2019 the Centre has cancelled the sixth and seventh rounds of the coal mines auction under which it was planning to put on sale 19 blocks. Earlier also the Govt had to annul the process for a fourth round of coal block auctions, on account of poor response from bidders in sectors like steel as well as depressed commodity prices and adverse market conditions.

Coal auctions in 2017-18 did not receive a good response. The government has now permitted captive coal block owners sell 25 per cent of their production in the open market and provided some flexibility in coal output. With the coal demand from the power sector exceeding the supply in 2018, the government is hopeful of higher output in the new year from already allocated mines and plans to further allot 10 mines to state-run behemoth Coal India Ltd (CIL) in 2019.

Of the 85 mines already allotted, 23 have already started production and the Coal Ministry expects 20 more mines begin production in the current financial year ending March 2019 or early in the next fiscal.

NEWS EXTRACT: NATIONAL

Possibilities of auction over 100 mineral blocks by March 2019

After securing Rs 1.81 lakh crore from e-auction of 50 mineral blocks, the government is looking to put another 100 mineral blocks for auction in the next six months, according to the Ministry of Mines. The government so far has auctioned 50 mines, including 23 limestone, 17 iron ore, 4 gold, 2 each of manganese and graphite blocks and one bauxite and diamond block each.

The trend of mineral block auction can be seen in Table. State wise distribution of blocks auctioned are given in Table 2.

This year's auction include blocks distributed in Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Telangana and Assam, as per a report by the Ministry of Mines on progress of block auction. Details of the auction can be obtained at <https://mines.gov.in/writereaddata/Content/successfulauction06032019.pdf>



Table 1 Trend of mineral block auction in India

Year-wise Auction Summary as on 06.03.2019					
Year	2015-16	2016-17	2017-18	2018-19	Total
Number of blocks auctioned	6	15	14	19	54
Mineral	4 Limestone, 1 Iron Ore, 1 Gold	7 Iron Ore, 5 Limestone, 1 Manganese, 1 Diamond, 1 Gold	10 Limestone, 2 Iron Ore, 1 Gold, 1 Bauxite	9 Iron Ore, 5 Limestone, 3 Graphite, 1 Manganese, 1 Gold	54 Blocks (24 Limestone, 19 Iron Ore, 4 Gold, 3 Graphite, 2 Manganese, 1 Bauxite, 1 Diamond)
Estimated value of the resources (in cr)	29,817.72	63,372.55	90,136.20	42,671.50	2,25,997.97
Additional Contribution through Auction (in cr)	13,032.23	44,501.74	53,850.14	32,004.51	1,43,388.62
Royalty (in cr)	4,565.44	9,564.42	14,895.90	6,703.21	35,728.97
DMF (in cr)	456.54	956.44	1,489.59	670.32	3,572.89
NMET (in cr)	91.31	191.29	297.92	134.06	714.58
Total of Royalty + DMF + NMET (Statutory Payments) (in cr)	5,113.30	10,712.15	16,683.41	7,507.60	40,016.45
Total revenue to the Govt. over 50 years (in cr)	18,145.53	55,213.88	70,533.55	39,512.11	1,83,405.07

Table 2 State wise mineral block auction as on 6 March 2019

States	Rajasthan (6)	Odisha (5)	MP (6)	Chhattisgarh (5)	Karnataka (14)	Jharkhand (7)	Andhra Pradesh (5)	Gujarat (3)	Maharashtra (3)	Total
Mineral	6 Limestone	3 Iron ore, 1 Limestone, 1 Manganese ore	3 Limestone, 1 Graphite, 1 Iron Ore, 1 Diamond	4 Limestone, 1 Gold	14 Iron Ore	2 Limestone, 2 Gold, 2 Graphite, 1 Iron Ore	4 Limestone, 1 Gold	3 Limestone	1 Bauxite, 1 Limestone, 1 Manganese	54
Estimated value of the resources (in cr)	49,183.86	41,781.84	3,624.59	26,937.32	50,792.30	8,217.19	7,947.32	35,276.91	2,236.64	2,25,997.97
Additional Contribution through Auction (in cr)	23,085.67	24,922.75	3,621.21	22,164.61	51,117.43	4,755.53	1,597.31	9,468.79	2,655.31	1,43,388.62
Royalty (in cr)	8,673.57	6,074.15	576.25	4,889.94	7,618.85	785.42	1,135.77	6,012.00	363.03	35,728.97
DMF (in cr)	867.36	607.41	37.62	448.99	761.88	78.54	113.58	601.20	36.30	3,572.90
NMET (in cr)	173.47	121.48	11.52	89.80	152.38	15.71	22.73	120.24	7.26	714.56
Total of Royalty + DMF + NMET (Statutory Payments) (in cr)	9,714.40	6,803.04	645.40	5,028.74	8,533.11	879.67	1,272.06	6,733.44	406.60	40,016.45
Total revenue to the Govt. over 50 years (in cr)	32,800.07	31,725.80	4,266.60	27,193.35	59,650.54	5,635.21	2,869.37	16,202.23	3,061.91	1,83,405.07

National Coal Production

National coal production initiatives for enhancing production capacity, evacuation from mines and transportation to consumers have started yielding results. The current scenario is shown in the tables below:

(a) COAL PRODUCTION

(Figs. In MT)

Company	February, 2019	February, 2018	% Growth	April- Feb., 2019	April- Feb., 2018	% Growth
CIL	58.0	54.5	6.5%	527.7	495.1	6.6%
SCCL	6.1	6.3	-3.0%	57.9	54.6	6.1%

(b) OVERALL OFFTAKE

Company	February, 2019	February, 2018	% Growth	April- Feb., 2019	April- Feb., 2018	% Growth
CIL	51.5	49.9	3.0%	548.5	525.0	4.5%
SCCL	5.9	5.4	8.0%	61.3	58.3	5.2%

(c) COAL DESPATCH TO POWER (COAL AND COAL PRODUCTS)

Company	February, 2019	February, 2018	% Growth	April- Feb., 2019	April- Feb., 2018	% Growth
CIL	40.0	37.7	6.2%	441.2	411.5	7.2%
SCCL	4.8	4.4	9.6%	50.0	48.1	4.0%

National Mineral Policy, 2019

National Mineral Policy, 2019 focuses on transparency, better regulations & enforcement, balanced growth & sustainability now grants of Industry status to Mining activity.

As published on 28th February 2019, The Union Cabinet, chaired by the Prime Minister Narendra Modi has approved National Mineral Policy 2019 that focuses on transparency, better regulations and enforcement, balanced growth as well as sustainability and grants of Industry status to Mining activity.

As a **benefit** of this New National Mineral Policy, there will be more effective regulation. It will lead to sustainable mining sector development in future while addressing the issues of project affected persons especially those residing in tribal areas. The **aim** of the National Mineral Policy 2019 is to have a more effective, meaningful and implementable policy that brings in further transparency, better regulation and enforcement, balanced social and economic growth as well as sustainable mining practices.

The National Mineral Policy 2019 includes provisions which will give boost to mining sector such as introduction of *Right of First Refusal for RP/PL holders*, encouraging the private sector to take up exploration, auctioning in virgin areas for composite RP cum PL cum ML on revenue share basis, encouragement of merger and acquisition of mining entities and transfer of mining leases and creation of dedicated mineral corridors to boost private sector mining areas. *The 2019 Policy proposes to grant status of industry to mining activity to boost financing of mining for private sector and for acquisitions of mineral assets in other countries by private sector.* It also mentions that *Long term import export policy for mineral will help private sector in better planning and stability in business.*

The Policy also mentions rationalize reserved areas given to PSUs which have not been used and to put these areas to auction, which will give more opportunity to private sector for participation. The Policy also mentions to make efforts to harmonize taxes, levies & royalty with world benchmarks to help private sector. Among the changes introduced in the National Mineral Policy, 2019 include the focus on make in India initiative and Gender sensitivity in terms of the vision. In so far as the regulation in Minerals is concerned, e-Governance, IT enabled systems, awareness and Information campaigns have been incorporated.

Regarding the role of state in mineral development online public portal with provision for generating triggers at higher level in the event of delay of clearances has been put in place. NMP 2019 aims to attract private investment through incentives while the efforts would be made to maintain a database of mineral resources and tenements under mining tenement systems. The new policy focusses on use coastal waterways and inland shipping for evacuation and transportation of minerals and encourages dedicated mineral corridors to facilitate the transportation of minerals.

The utilization of the **district mineral fund** for equitable development of project affected persons and areas. NMP 2019 proposes a long term export import policy for the mineral sector to provide stability and as an incentive for investing in large scale commercial mining activity. The 2019 Policy also introduces the concept of Inter-Generational Equity that deals with the well-being not only of the present generation but also of the generations to come and also proposes to constitute an inter-ministerial body to institutionalize the mechanism for ensuring sustainable development in mining.

It may be noted that National Mineral Policy 2019 replaces the extant National Mineral Policy 2008 ("NMP 2008") which was announced in year 2008. The impetus to review NMP 2008 came about by way of a direction from the Supreme Court vide its judgment dated 02.08.2017 in Writ Petition (Civil) No. 114/2014 entitled Common Cause v/s Union of India & Others. In compliance of the directions of the apex Court, the Ministry of Mines constituted a committee on 14.08.2017 under the chairmanship of Dr. K Rajeswara Rao, Additional Secretary, Ministry of Mines to review NMP 2008. The Committee had members from Central Ministries/ Departments, State Governments, Industry Associations and Subordinate offices of

Ministry of Mines. The Committee also invited concerned NGOs and Institutional Bodies to take part in the deliberation of the Committee meetings. The Comments/suggestions from the stakeholders were also sought. Based on the deliberations held at Committee meetings and stakeholders' comments/ suggestions, Committee Report was prepared and submitted to the Ministry of Mines. The Ministry of Mines accepted the committee Report and invited the comments/ suggestions of the stakeholders as part of the PLCP process. Based on the received comments/ suggestions received in PLCP process and the comments/ suggestions from the Central Ministries/ Departments the Ministry of Mines finalized the National Mineral Policy 2019.

Invitation

The next issue of our MGMI News Journal would like to add a section on Mining Story in English and Hindi.

We want to bring personal memoir involving operations in mining, particularly of underground coal and metal mining. Please send us some of your interesting experiences of work site involving excellent expertise of miners, exemplary work style and dedication of un-noticed workers which might have lost in the history.

We also request our senior members to write articles for a proposed MGMI publication on Indian Mining History. Any members having old photographs, booklets etc related to Indian Mining experiences of the past may kindly send to the MGMI office for digital archival.

Women in Indian Mining: A breakthrough notification
MINISTRY OF LABOUR AND EMPLOYMENT NOTIFICATION

New Delhi, 29th January, 2019

S.O. 506(E).—In exercise of the power conferred under sub-section (1) of section 83 of the Mines Act, 1952 (35 of 1952), the Central Government hereby exempts the women employed in any mine above ground and in any mine below ground from the provisions of section 46 of the Mines Act, 1952, subject to the following conditions, namely:—

(a) in the case of women employed in any mine above ground,—

- I. the owner of a mine may deploy women between the hours of 7 pm and 6 am in the mine above ground including opencast workings;
- II. the deployment of women shall be after obtaining the written consent of the concerned woman employee;
- III. the women so deployed shall be provided with adequate facilities and safeguards regarding occupational safety, security and health;
- IV. the deployment of women shall be subject to the framing and implementation of Standard Operating procedures on the basis of the guidelines issued in this regard by the Chief Inspector of Mines from time to time;
- V. the deployment of women shall be in a group of not less than three in a shift.

(b) in the case of women employed in any mine below ground,—

- I. the owner of a mine may deploy women between the hours of 6 am and 7pm in technical, supervisory and managerial work where continuous presence may not be required.
- II. the deployment of women shall be after obtaining the written consent of the concerned woman employee;
- III. iii) the women so deployed shall be provided with adequate facilities and safeguards regarding occupational

safety, security and health;

- IV. the deployment of women shall be subject to the framing and implementation of Standard Operating Procedures on the basis of the guidelines issued in this regard by the Chief Inspector of Mines from time to time;
- V. the deployment of women shall be in a group of not less than three.

[F. No. Z-16025/45/2017-ISH-II]

KALPANA RAJSINGHOT, Jt. Secy.

MOEF Matters

MOEF has now revealed the draft policy guideline for diversion of forest for Considering Proposals Affecting National Parks & Sanctuaries. This is available at

<http://www.moef.nic.in/sites/default/files/np-sanc.pdf>. The draft national forest policy is available at

<http://www.moef.nic.in/sites/default/files/Draft%20National%20Forest%20Policy%2C%202018.pdf>.

The overall objective and goal of the present policy is to safeguard the ecological and livelihood security of people, of the present and future generations, based on sustainable management of the forests for the flow of ecosystem services In order. to achieve the national goal for eco-security, the country should have a minimum of one-third of the total land area under forest and tree cover. In the hills and mountainous regions, the aim will be to maintain two-third of the area under forest & tree cover in order to prevent soil erosion and land degradation and also to ensure the stability of the fragile eco-systems.

This policy will be an important planning input for the mining industry and will affect forest land acquisition for mining.

MOEF Inviting Public Comments

Inviting Public Comments on “Validity of Environmental Clearance” for mining of minerals Expiring on 31-03-2020.

MINISTRY OF ENVIRONMENT, FOREST
AND CLIMATE CHANGE NOTIFICATION
New Delhi, 27th February, 2019

S. O. 1038 (E). Whereas, the Central Government proposes to issue following draft notification in exercise of the powers conferred by sub-section (1), and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) is hereby published, as required under sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, for the information of the public likely to be affected thereby; and notice is hereby given that the said draft notification shall be taken into consideration on or after the expiry of a period of sixty days from the date on which copies of the Gazette containing this notification are made available to the Public;

Any person interested in making any objections or suggestions on the proposal contained in the draft notification may forward the same in writing for consideration of the Central Government within the period so specified to the Secretary, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, Aliganj, New Delhi-110 003, or send it to the e-mail address at menong@cag.gov.in and sharath.kr@gov.in

Draft Notification

Whereas, the Environment Impact Assessment Notification vide S.O. 1533 dated the 14th September, 2006 (hereinafter referred to as the EIA Notification, 2006), and subsequent amendments issued by the Government of India provides the “Validity of Environmental

Clearance” for mining of minerals is meant for period of project life as estimated by Expert Appraisal Committee or State Level Expert Appraisal Committee or District Level Expert Appraisal Committee subject to a maximum of thirty years;

And whereas, the Hon'ble Supreme Court vide judgment dated the 7th February, 2018 in Special Leave to Appeal (Civil) No. 32138 of 2015 in the matter of Goa Foundation versus M/s Sesa Sterlite Ltd., &Ors., inter alia, has directed to obtain fresh environmental clearance to those who are successful in obtaining fresh mining leases;

And whereas, the clause (6) of section 8A of the Mines and Mineral (Development & Regulation) Act, 2015 prescribes as:- “Notwithstanding anything contained in sub-sections (2), (3) and sub-section (4), the period of lease granted before the date of commencement of the Mines and Minerals (Development and Regulation) Amendment Act, 2015, where mineral is used for other than captive purpose, shall be extended and be deemed to have been extended up to a period ending on the 31st March, 2020 with effect from the date of expiry of the period of renewal last made or till the completion of renewal period, if any, or a period of fifty years from the date of grant of such lease, whichever is later, subject to the condition that all the terms and conditions of the lease have been complied with”.

And whereas, the clause (4) of section 8A of the Mines and Mineral (Development & Regulation) Act, 2015 prescribes as:- “On the expiry of the lease period, the lease shall be put up for auction as per the procedure specified in this Act”

And whereas, in the view of the above, there would be cases related to mining projects granted environmental clearance under EIA Notification, 2006, wherein validity of the

environmental clearance granted for the mining lease may not have expired, but the mining lease will have ended and freshly re-allocated to the successful bidder as per the provisions of Mines and Mineral (Development & Regulation) Act, 2015. And whereas, the mining projects mentioned in paragraph above are required to obtain fresh environmental clearance under the EIA Notification, 2006, in pursuance of the aforesaid judgment of the Hon'ble Supreme Court; And whereas, the Ministry of Environment, Forest and Climate Change deems it necessary for implementation of the aforesaid judgment of the Hon'ble Supreme Court as well as continuation of the mining activity as per the approved mining scheme, mining plan, production capacity, mine lease area specified in the environmental clearance granted under the provisions of the EIA Notification, 2006, as these mining projects were already appraised and the Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) have been considered by the concerned Expert Appraisal Committee or the State Level Expert Appraisal Committee, as the case may be, and granted environmental clearance by the regulatory authority concerned. These projects need to be granted fresh environmental clearance expeditiously so that their mining activity does not get disrupted as per the earlier approved environmental clearance;

Now, therefore, in exercise of powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the said Environment (Protection) Act, 1986 (29 of 1986), read with clause (d) of sub-rule (3) of rule 5 of the

Environment (Protection) Rules, 1986, the Central Government hereby directs, for implementation of the aforesaid judgment of the Hon'ble Supreme Court dated the 7th February, 2018 in Special Leave to Appeal (Civil) No. 32138 of 2015 in the matter of Goa Foundation versus M/s Sesa Sterlite Ltd., &Ors, as well as, continuation of the mining activity without any changes to the approved mining scheme, mining plan, production capacity, mine lease area specified in the environmental clearance granted under the provisions of the EIA Notification, 2006 through an expeditious mechanism for grant of fresh environmental clearance. The successful bidder selected by the Government in accordance with law, in all such cases, shall make an application in Form-1 as given in Appendix-I of the EIA Notification, 2006, for grant of environmental clearance under the provisions of the EIA Notification, 2006. All such applications shall be considered by the concerned Expert Appraisal Committee or the State Level Expert Appraisal Committee, as the case may be, who shall decide in the light of approved EIA/EMP on the due diligence necessary including the need for preparation of fresh Environmental Impact Assessment Report and public consultation and the application shall be appraised accordingly for grant of environmental clearance subject to the same validity period as was initially granted. However, the concerned Expert Appraisal Committee or the State Level Expert Appraisal Committee, as the case may be, may stipulate case specific additional conditions to such mining projects.

[F No. Z-11013/47/2018-IA.II (M)]

GEETA MENON, Jt. Secy.

MINING NEWS : INTERNATIONAL

Israeli Mining company unearths rare mineral, Carmeltazite.: A new gemstone

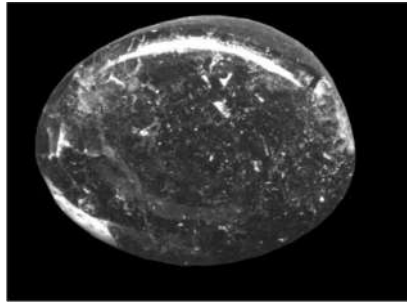
Carmeltazite, harder than diamond is a rare oxide mineral, with its first discovery on Earth has been announced in 2019. The chemical formula for Carmeltazite is $\text{ZrAl}_2\text{Ti}_4\text{O}_{11}$. The International Mineralogical Association's Commission on New Minerals and Mineral Names approved the registration of the mineral under application 2018-103.

This mineral was previously only known to exist in outer space. Now it has been found on Earth by an Israeli mining company called Shefa Yamim, Israeli Newspaper Haaretz reports.

The mineral was found embedded in sapphire, the second hardest mineral after diamonds. The largest stone found so far is 33.3 carats.

It was named carmeltazite due to its discovery near Mount Carmel and the minerals it contains - titanium, aluminium and zirconium.

For a new mineral to be declared as such, its



composition and crystal structure and properties must be substantially different from those of any existing mineral species, according to the **International Mineralogical Association** (IMA)'s Commission on New Minerals and Mineral Names.

Carmeltazite and its hosting corundum most likely formed near the crust-mantle boundary of Earth, at a depth of almost 18 miles. Under high pressure and temperatures, the partially molten rocks released fluids, which reacted to form new minerals. The corundum crystals, containing the carmeltazite, were then transported through volcanic vents into the upper crust. Sixty-five million years ago volcanoes flooded the area with lava and steam-blast eruption produced thick deposits of volcanic breccia and tuff. Carmeltazite is found as veins almost black to dark green in color with a metallic luster in the larger blue sapphire-like crystals, embedded in the volcanic rocks.

The company, Shefa Yam that discovered it has already received a trademark from the Israeli government to market the stones as the Carmel Sapphire. This may be available in future jewellery market.



Mount Carmel, where Carmeltazite has been discovered

Report on Meghalaya Coalmine Mishap

*- Bibhas Chandra Bhattacharya **

The year 2018 ended with a sad coalmine mishap in Meghalaya. As the press report goes, on 13 December, 15 (fifteen) miners were trapped inside a 370 ft. deep coal mine at Ksan in Meghalaya's East Jaintia Hill district. It was an illegal mine operating without any license or permission from the State or district authorities. So there was no official information to the authorities from the mine operator regarding the mishap.

A top police officer told PTI that it took them long time to locate the site of the mine after getting unauthenticated information from local people about the accident. Local people were scared to divulge information, fearing a backlash from mine owners. Local people who consider mining to be their only means of livelihood, fear of police action simply add to their woes. Preliminary investigation into the accident revealed that the location of the mishap was in an illegal coal mine at Ksan of east Jaintia district of Meghalaya and it happened due to gushing of water from the nearby Lytein river while the workers of the 'Rat-hole' mine unknowingly punctured similar adjacent mine wall making passage to huge water probably connected to the Lytein river. As a result, the tunnel the miners were in, got flooded. When the news came out, immediately the State and district authorities took action for rescue of the trapped workers. The Supreme Court issued directive to take all necessary actions for rescue of the men trapped inside the mine. Experts from Odisha Fire and Disaster team, Kirloskar Brothers Ltd, Coal

India Limited, etc rushed to the site.

The high capacity pumps of Kirloskar Brothers Ltd were pressed into action to dewater the main shaft. Odisha Fire and Disaster team started pumping water from nearby old shaft located 500 meters from main site of the mine that collapsed in Ksan. High capacity submersible pumps from Coal India Ltd also utilised affecting dewatering operations in the nearby abandoned mines. Even then little headway could be made in reducing the water levels in the main shaft and the nearby mines due to insufficient pumping capacity compared to continuous fresh seepage from the river into the mine.

Rescue divers from the Indian Navy and the National Disaster Response Force (NDRF) too could not venture down the mine to gauge the water level inside the main shaft as it was beyond the safe diving limit of 100 feet. Even after about two weeks attempt to rescue the trapped miners, water level in the main shaft was about 160 feet, while its total depth was around 370 feet. Further, the divers after proceeding some distance, found roof fall partially collapsing the tunnel.

Problems encountered by the rescuers -

No availability of Mine Plan: The illegal mine at Ksan was being operated unscientifically without maintaining any map/blue print of the workings, having no information about the extension of the adjacent mine/s water logged or caved, existence of river/water bodies on the surface above and around working mines. Local people cut coal in very haphazard manner

* Council Member, MGMI & Former CGM (WBPD), CIL

without proper exploration of coal occurrence and maintaining no mine plan. The foremost problem being faced by the team of rescue workers is the lack of blueprint of the area - surface and underground. The team could only report after initial investigation that the miners were trapped in one of the Rat-holes in a 5 square kilometre area, which was closed off for mining in 2014 after an order from National Green Tribunal (NGT) banning Rat-hole mining. The rescue team had no clue of knowing which rat-hole to dig or which way to navigate for rescue of the trapped miners.

However, after around 34 days of the accident, an underwater remotely operated navy vehicle detected a body of one of the trapped miners. It was recovered from a depth of 210 ft. belowground. The body, which could not be identified, showed signs of decomposition and many parts had started to disengaged (The Telegraph 18/01/2019). PTI said navy divers also spotted through remotely operated vehicle a number of skeletons inside one of the rat-hole mines. They said it was not clear if the skeletons were of the missing miners.

Water Logging: The water gushing in from the nearby river has made it impossible for divers to go in and look for trapped miners. A team of NDRF divers tried but had to return as the water level was too high. Subsequently, highly-skilled navy divers were called, but they also failed to dive in unless the water level receded a bit. Over the course of 25 days, local water pumps were replaced by the specialised ones from Odisha. Besides, Kirloskar company's special pumps were also employed in the job. But the water level was yet to recede for the Rescue divers from the Indian Navy and the NDRF to be able to make any significant impact in their search and rescue

operations as the water level was still beyond 100 feet, the safe diving capacity for the divers.

Supreme Court was very unhappy about the progress of rescue work. The government told SC that the team of rescuers was yet to locate the source of river seepage into the cave system. Which implies that no matter how much water the pumps were able to pump out, the problem was not likely to solve as river water was gushing into and re-flooding the mines.

Difficult Terrain: The entries to the tunnels were located atop hills fully covered in trees in the East Jaintia Hills district. There was no direct road. Even a person on foot had to trek for several hours to reach the spot. Taking heavy rescue equipment and teams to the rescue operation site was proving to be a difficult task.

Lack of Coordination in Rescue Efforts: Describing the rescue operation as "very slow", mining expert and award-winning rescuer Jaswant Singh Gill said, "There is no coordination at all. Safety of the human lives is most important. In this kind of an emergency situation, we expect they should work like a machine and synchronise like a machine."..... "They need to get the mining map to know from where the water has entered the coalmine ... there are many abandoned flooded coalmines and those boys (trapped miners) have punctured into the wall of one abandoned mine," Gill told IANS.

Lack of Authentic Information: East Jaintia Hill deputy commissioner, Mr. F.M. Dophth invited family members of the five of the 15 trapped miners to view the videos captured through the remotely operated vehicle. These families included those of the three miners from nearby Lumtheri village and two from Assam's Chirang district. However, they could not identify the bodies immediately. Investigation

revealed that apart from five miners, seven miners from villages under Rajbalsa in West Garo Hills district and three from Assam were also said to have got trapped.

As reported by The Economic Times (Jan. 07, 2019), even after the accident in the Ksan mine on Dec13, 2018, in another instance of illegal Rat-Hole mining two miners were killed in East Jaintia hill. The bodies were recovered late on Jan. 05, from a coal mine in Jayiah village highlighting the fact that illegal mining was still continuing even after NGT's ban on unsafe mining since 2014 and recent trapping of 15 miners in Ksan Mine that still could not be traced.

Coal Crackdown

Meanwhile the district administration of the East Garo Hills began cracking down on illegal coal transportation, seizing the tracks carrying illegal coal and led team sealing the rat-holes mines. Illegally mined coals of the area goes even to Bangladesh and the upcountry states of India, besides supplying to the nearby consumers.

Natural beauty of Meghalaya

Meghalaya, one of the Seven Sister States of north east is a beautiful hilly state. (The author used to visit the North Eastern Coalfield Mines during his service in nineties with Coal India). The green view all around in the hilly topography with small and big waterfalls and streams make the natural beauty one of the most attractive place on earth. With average annual rainfall as high as 12,000 mm in some areas, Meghalaya is the wettest place of the country. The western part of the plateau, comprising the Garo Hills region with lower elevations, experiences high temperatures for most of the year. The Shillong area, with the

highest elevations, experiences generally low temperatures. The maximum temperature in this region rarely goes beyond 28 °C, whereas sub-zero winter temperatures are common. People living here are very simple and hard working.

Meghalaya is predominantly an [agrarian economy](#) with a significant commercial forestry industry. Agriculture and allied activities engage nearly two-thirds of the total work force in Meghalaya. The State being hilly without much of level ground, it becomes difficult to produce agricultural products profitably in big scale. However, the contribution of this sector to the State's NSDP is only about one-third. Agriculture in the state is characterised by low productivity and unsustainable farm practices. Despite the large percentage of population engaged in agriculture, the state imports food from other Indian states. Infrastructural constraints have also prevented the economy of the state from creating high income jobs at a pace commensurate with that of the rest of India. Unfortunately, it has not much significant industries. The state has about 1,170 km of national highways. It is also a major logistical centre for trade with Bangladesh. However, Meghalaya has a rich base of [natural resources](#). These include minerals such as coal, , [sillimanite](#), [Kaolin](#) and [granite](#) among others.

Coal Geology of Meghalaya

The coal-bearing Tertiary sediments of the north eastern region of India range in age from Palaeocene to Oligocene. The coal deposits of Meghalaya, Mikir and North Cachar hills of Assam contain generally thin seams of Eocene age and were formed under stable shelf condition in peripheral platform areas. The coal deposits of Oligocene age occur in a narrow,

linear belt of over thrusts referred to as the 'belt of Schuppen', that extends from Nagaland through Assam to Arunachal Pradesh; they were deposited in near-shore, deltaic, wet forest swamps to marshy environments, close to a geo-synclinal trough. The coal seams attain considerable thickness in the Makum and Namchik-Namphuk coalfields.



Central loading point of coal on to the truck.
(Source: NET)

Meghalaya Coal, popularly known as 'Tertiary coal' occurs in all the districts of the State. The ash content is much lower than that of the best quality coal of the country and its calorific value exceeds some of the best grade coal but is handicapped for its high sulphur-content. The coal is mostly of sub-bituminous type. It is being used in a large number of industries.

As said above, the coal seams are generally thin and occur in folded structure with geological disturbances breaking continuity of the seams. Because of these difficulties, no big coal miners ventured so far underground mining in big way. Coal India ventured in Meghalaya but success is still to come. Mass production of coal by mechanised method underground is yet to be done by any corporate miner.

Rat-hole mining

According to the information gathered from different sources, illegal mining in Meghalaya is a rampant practice in the State in the hilly

topography in small scale at various sites of valleys and hills. In fact Rat-hole mines are spread throughout Meghalaya, but are mostly concentrated in Jaintia Hills, South Garo Hills around the towns of Baghamara and Nangalbibra, and area around Nongjri and Shallang in West Khasi Hills.

Illegal mines are operated by unauthorised contractors engaging poor locals, including child labours, to cut and raise coal from the mine in hills and valleys by driving tunnels (adits) of narrow cross-section in most unscientific manner without taking proper safety measures. Children are preferred to descend the mine through narrow tunnels for cutting with small cutting tools and transporting to the surface manually along the tunnel in unventilated suffocating narrow places taking all the risks of roof fall, water gushing in, etc.



Mouth of a Rat-hole mine
(Source: NET)

Such mining of coal resources below ground is the most lucrative profession for the poor village people. Hundreds of people, many of whom are children, are engaged in the Rat-hole mines every day. They are ready to take any risk for cutting coal manually entering the coal seams in tunnels with small cutting tools

belowground, carry the coal in typical bamboo carriers on their back from down belowground or haul the coal in carriages made of bamboo and wood with two wheels and push and pull it to the surface. Geology of area is such that coal seams occur in small thickness often with high inclination in folded structure. Folded structure attracts the workers to make level tunnel, although the tunnels cannot extend any big distance before the workers make another entry at some distance again sidewise or up or down. The entrance of the tunnels are so narrow that a man cannot stand straight. Mostly they crawl or bend to enter the tunnel to reach the coal face. As there is no machine to cut the coal/stone, the workers always work in the seam as far as possible. For opening more coal faces they go down the hills in valleys in bamboo ladders hundreds of feet or small buckets hanging utilising manually operated winches erected on three steel pipes to reach the place of occurrence of coal down the valley and lifting coals in buckets in a very risky temporary make shift arrangement.

At its peak, the state produced coal worth \$4 billion a year, a substantial portion of India's total production value as reported by the press. Produce of such mines then gathered in stocks in areas accessible by all such rat-hole mine mouths nearby roads for despatch to different consumers including Bangladesh by trucks unauthorized.

Problems with Rat-hole Mining

Mine Accidents: As the unofficial guess goes thousands of workers are engaged in the illegal

Rat-hole mines and transporting the coals outside the district/State daily. Mining condition in the workplace is very risky due to ill ventilation, roof and side falls, inrush of water from the old abandoned mines as well as surface water bodies. No record is available regarding daily engagement of work persons, fatal and seriously injured persons and people dying without any medical facility. Accidents are daily incidents which go un-noticed in the mines killing many people.

Environmental Problem: Illegal rat-hole mining is an environmental menace polluting the streams/rivers and rain waters all around. Coal mining has resulted in pollution of the Kupli River so much so getting drinking water for the villagers and also for domestic use by the people around is a big problem in mining areas.

Colossal Loss of Natural Resource: The Meghalaya is having about 650 million tonnes of coal reserve. The multi-crore coal business with links across several states in the country, and also in Bangladesh, is allegedly funded by high-profile politicians and businessmen and is responsible for spoiling the coal reserves of the State by adopting unscientific and irregular mining against the rule of conservation.

Ban on Rat-hole Mining

In April 17, 2014, the National Green Tribunal (NGT) banned Rat-hole mining after All Dimas Students Union and the Dima Hasao District Committee filed a petition highlighting the unscientific and unregulated Rat-hole coal mining operations in the Jaintia Hills and contended that drinking water in the Kupli River was severely polluted due to acidic coal produced in mines and the coal dusts flowing the rivers and stream of Jaintia Hill.



Cutting coal in a Rat-hole mine.
(Source: NET)

But despite the ban, in subsequent orders following petitions by coal mine owners, the National Green Tribunal and the [Supreme Court of India](#) continued to allow transportation of coal dug prior to the enactment of the order on 17 April 2014. The Meghalaya government challenged the NGT ban in the Supreme Court in November, 2018. On 4 December 2018 the Supreme Court again issued an order that the transportation of coal mined prior to the ban was extended to January 31, 2019. However NGT as well as anti-mining activists pointed out that illegal mining of fresh coal still continuing and being transported out the district in the name of old coal stock. In November 2018, two activists were attacked for gathering evidence of illegal coal mining in the area.

As on May 31, 2018, the extracted coal that is yet to be transported was 1,76,655 metric tonnes. The next hearing of SC is awaited. The court appointed human rights lawyer, Colin Gonsalves as the amicus curiae in the case. A Citizen's Report on the illegal coal mining has also been submitted in the court through Gonsalves that talks about the environmental and human cost of running these mines.

“The extension of the transportation deadline

since 2014 has meant that in the name of transportation of already mined coal, mining is being done rampantly here. Even the workers who are currently trapped now in East Jaintia left their home some two weeks back to work in the mines. This is around the time the Supreme Court allowed an extension on the coal transportation deadline,” a Meghalaya-based source told Down To Earth, on the condition of anonymity.

Illegal extraction of coal in the state has also been pointed out by the Comptroller and Auditor General of India (CAG) this year in its report on the revenue sector of the state. The report was released on April 20, 2018. The CAG report found that the under-reporting of coal exported to Bangladesh resulted in the short realisation of revenue by around Rs.46 crore. The audit observed that there was no system in place in the Mining Department to cross-verify and reconcile the mining figures.

Impact of the Ban

Ban had come across a rude shock for the mine owners, who just could not accept the fact that the NGT controlled activities on their land. Unlike other parts of the country, land in Meghalaya is owned privately or by a community, under customary laws and protected by the Autonomous District Councils formed under the Sixth Schedule of the Indian Constitution. The local people also have problem with the NGT ban. They are yet to come to terms with it.

No lessons learnt on Meghalaya Mining Disaster

The disaster that struck the coal mine at Ksan in Meghalaya's Jaintia Hill district on December 13, trapping at least 15 workers, is a shocking reminder that a fast-growing economy such as India continues to allow 'Dickensian' mining

practices. India being home to some of the worst mine disasters, such as Chasnala near Dhanbad in 1975 in which more than 370 people were killed, the full spectrum of mining activity should be tightly regulated. Yet, the Ksan mine, referred to as a Rat-hole mine, was allowed to function in violation of not just safety norms but a complete prohibition issued by the NGT. Clearly, the administration did not act to stop unscrupulous operators of the illegal mine from exploiting desperate workers, some of them from Assam. People from local as well as neighbouring States come willingly to work in the Rat-hole tunnels because that is the most remunerative employment available to them. After disaster struck, it was incumbent on the Meghalaya government to launch an immediate rescue effort. But it did not possess the equipment to dewater the stricken mine quickly, and did not show any urgency too in requisitioning it from elsewhere, in spite of the involvement of the National Disaster Response Force. As the press report goes, the Meghalaya mining disaster exposes a series of administrative lapses. Meghalaya has no excuse for not closing down such dangerous mines.



Carrying coal from mine to the truck loading point.
(Source: NET)

The illegal mining practice with unapproved method of working is in vogue for decades in Meghalaya. For highlighting it the activists, have become target of violence by the mine operators. In the glare of national attention, now the Chief Minister, Conrad Sangma, has acknowledged that illegal mining does take place. His government has been remiss as it failed to act on the NGT's directions. It must bear responsibility for what has happened at Ksan, and needs to work to prevent such tragedies. Unfortunately, the tribal communities come on the way to stop it.

Tribal Communities

The tribal communities in the Tribal States of North East are very powerful for dealing with local aspects. In Meghalaya the tribal community of Jaintia Hill view Rat-hole mining an important livelihood for their people. The following are the highlights on the imposition and resisting mining ban:

Tribal communities initiate and manage coal mining in Nagaland and Meghalaya.

Laws banning coal extraction have been challenged and resisted by local communities.

The right to extract coal is tied to protecting tribal land rights.

Tribal autonomy in coal policy is progressive and enables capture by local elites.

Regulation of coal mining has come as a right from unexpected sources.

Bans on unregulated coal mining have been accepted in two tribal majority states in India's north-east frontier - Nagaland and Meghalaya. In Nagaland the state government imposed the ban in an attempt to capture control of coal extraction and trade, while in Meghalaya India's National Green Tribunal (WGT)

imposed the ban over concern for the environment and labour conditions. In both cases local communities have opposed the bans, and in some areas resumed mining under the authority of tribal councils and powerful civil society actors.

The government machineries of both the states fail to have control over and regulate the illegal mining on three counts that compel it to have state control partially due to legacy of powerful armed conflict:

First, in both locations (Nagaland and Meghalaya) the majority of the coal mining activity has been initiated and managed by members of tribal communities rather than profit-driven outsiders.

Second, in contrast to other contexts in India (notably Orissa and Jharkhand) where large State or private enterprises seek to modify the law to enable coal extraction, in Nagaland and Meghalaya it has been communities that resent and challenge the State and national laws applied to their lands.

Third, the right to extract coal is connected to the right of tribal communities to determine what happens on their lands.

Suggested Solutions

If the Jaintia Hill miners can produce so much of coal in their own way manually, albeit illegally, why not sincere attempt be made for developing legal mines in the area with approved scientific mechanised method of mining, not with the motive of developing profitable mines but keeping in view the welfare of the people. Cost of production, of course, will be higher than the market price, but instead of selling the mechanised coal as run-of-mine, if the coal is processed by adding value to it in the downstream side with the help of suitable technology keeping in view the

special qualities of the coal, the proposal will be a viable one. This will help conservation of the resource, production with safety as well as help creating employment opportunity for the people affected by the NGT ban on Rat-hole mining. Downstream activities may be in the following line:

(1) Coal reserves of the north-east is having qualities of raw feed for 'coal to liquid' process. A sincere effort may be made for the same based on further research. The current high price of fuel oil should justify the venture.

(2) Research should be conducted also to find out possibility of underground gasification of coal (UGC) of the region. Seams are thin, geologically disturbed and irregular in occurrence. But these will not come on the way for underground gasification of the coal to produce an eco-friendly fuel gas for industrial/domestic use.

(3) Meghalaya has a rich base of natural resources. These include minerals such as coal, limestone, sillimanite, Kaolin and granite among others. Meghalaya has a large forest cover, rich biodiversity and numerous water bodies. The low level of industrialisation and relatively poor infrastructure base acts as an impediment to the exploitation of these natural resources in the interest of the state's economy. In recent years two large cement manufacturing plants with production capacity more than 900 MTD have come up in Jaintia Hills district and several more are in pipeline to use the rich deposit of very high quality limestone available in this district. Industrialisation utilising the minerals available in the state should be enhanced particularly with the motive of opening employment opportunities for the persons affected by the ban of Rat-hole mining in the State.

Conclusion

According to government reports, the coal mining industry was among the biggest revenue earners for Meghalaya, generating about Rs 700 crore annually, prior to its ban in 2014. Obviously all concerned are very happy with the situation with a blind eye on the dark side of the illegal coal mining. The mishap is a glaring example of utter negligence and poor regulatory enforcement by the concerned, consequential to deliberate involvement of or shelter by politically influential people. As reported in the press a senior home department official said the district police force do not have adequate personnel to deal with the problem, obviously this is simply a face saving statement.

Under the circumstances, all concerned, including the moneyed mine owners, contractors operating the Rat-hole mines, beneficiaries directly or indirectly, like politicians and administrative departments, has to accept and admit that simply banning the practice of illegal mining, arresting and punishing the people involved or closing the mouths of the Rat-hole mines or even cracking on the unauthorised transport of illegally mined coal and taking action on consumers of the illegally mined coal will not stop the age-old wrong practice. It is good that the National

Green Tribunal (NGT), after the accident, has imposed a Rs 100-crore fine on the Meghalaya government for failing to check illegal coal mining in the state (as reported by PTI). The tribunal said the fine was imposed on the State government as a deterrent and for its inaction to curb illegal mining. It said the fine amount can be recovered from illegal miners and officials who allowed the practice for their vested interest. The fine amount has to be deposited with the Central Pollution Control Board within two months, ANI reported. But this is not going to solve the issue. All out efforts has to be taken to find out solutions to the problem from political, administrative and social point of view. Most important and priority-one has to be providing alternative livelihood for families of the people in mining areas who are affected by the ban of illegal Rat-hole mining. The alternatives suggested above may be thought of in this regard.

(The write up has been prepared based on the information came out in the press during last about two months after the accident on Dec. 13, 2018, Report of the Down To Earth and the Wikipedia. Attempt has been made in the article to cover all aspects related to the coal mining mishap and suggested way forward to come out of the problem.)

SAFETY CONCERN

“Concern for man himself and his safety
must always for the chief interest of all technical endeavours.”

- Albert Einstein

OBITUARY



B J Rao, 6631 - LM

B J Rao, graduated from Camborne School of Mines, Camborne, Cornwall, United Kingdom, in the year 1961. Worked in the U.K. and Sweden for a year to gain experience in development and sinking of mining shafts. Obtained F.C.C (Metallurgy) qualification before returning to India in 1964 and joined Hutti Gold Mines Co. Ltd., Hutti, Raichur District, Karnataka, as Mining Engineer. He was promoted in 1985 to the position of Mine Manager, Chitradurga Copper Mines, a subsidiary of Hutti Gold Mines. Received “National Safety Award (Mines)” from the President of India Shri R. Venkataraman in 1990. Retired from Hutti Gold Mines in 1991 but continued working as Mining Consultant with NMDC in Hyderabad until 1995. He was actively involved with expansion schemes at Hutti Gold Mines at the same time. Had been a Member of Institute of Mining & Metallurgy, U.K. and F.G.S (India).



Srikumar Mitra, 7455 - LM

Srikumar Mitra was born in 1940. He completed his initial education in Shillong and Kolkata. Subsequently, he joined Shibpur Engineering College as a BE student and passed out in 1962. He was immediately employed by the then NCDC, a private coal company, which later got nationalized as Coal India Limited. His job profile took him to various places including Jharia , Dhanbad, Chirimiri and Sambalpur, He got promoted to the rank of Additional General Manager, World Bank Project in 2001. He was settled in Kolkata.

He is survived by his wife and two sons. The elder son is a software engineer in a private firm and the younger one is a commissioned fighter pilot in Indian Air Force. Both of them are happily married and have a child each.

REMEMBRANCE

“Friends come into our lives and friends leave our lives.
But friends never leave our hearts.
And best friends always get to stay in the best places in our hearts.”
- John M. Simmons, *The Marvelous Journey Home*

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