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[ijirset@gmail.com](mailto:ijirset@gmail.com)

[www.ijirset.com](http://www.ijirset.com)



# Environmental & Social Ethics and Sustainability Issues in the Mining of Minor Minerals Sector: In Indian Context

S. C. AGARWAL FIE

Former President ASI (K) Ltd

**ABSTRACT:** Mining is a complex and intensive process that can have major environmental and social impacts. In even the best-managed mines some degree of disturbance is inevitable. In some cases the potential for harm may mean that a decision not to mine may be the best option. However in most cases the most negative safety and environmental impacts can be avoided if companies operate according to best practice standards. The Initiative for Responsible Mining Assurance (IRMA) has released the second revised draft Standards for Responsible Mining, as a first ever global certification programme for industrial-scale mine sites, planned to begin in late 2016. IRMA-16 has elaborated the requirements of standards in the field of environmental responsibility, water quality and quantity, mine waste management, air and noise quality, greenhouse gas emissions, protected areas, biodiversity outside officially protected areas, reclamation and closure, delivering benefits, environmental and safety impact assessment (EIA) beside Working conditions, occupational health and safety, human rights due diligence and compliance, mining and conflict-affected or high-risk areas, HIV/AIDS, tuberculosis (TB) and malaria 57, obtaining community support and cultural heritage and resettlement.

The author had taken initiative in 1992 to develop responsible practice of mining of dimensional limestone, commercially known as Kotah Stone. Comparison has been drawn between what has been achieved on environmental performance after adopting best mining practice in mining Kotah Stone visa-vis IRMA Standards. On evaluation, the performance on improvement in environmental safety standards after adopting responsible mining with best mining practice, found to be compatible with IRMA Standards.

**KEYWORDS:** environmental ethics, social ethics responsible mining, kotah stone, IRMA standards, environmental impact.social

## I. INTRODUCTION

Mining is a complex and intensive process that can have major environmental and social impact. Even in the best managed mine some degree of disturbance is inevitable. In some cases the potential of harm may mean that a decision not to mine may best decision. However in most cases the most negative social and environmental impact can be avoided/ minimised if the lessee operate the mine according to best practice standards of mining and committed to Sustainable Social Development and Environmental Ethical norms.

## II. ETHICS

Ethics maybe defined as Ethics is a system of principles that helps tell right from wrong, good from bad. Ethics can give real and practical guidance to our lives. Ethics is all about the choices we make. We constantly face choices that affect the quality of our lives.

The best definition of Ethics is a system of moral principles and perceptions about right versus wrong. The social worker doesn't attempt to change the client system by imposing her or his values on the client system, but instead strives to understand and respect client value.



### III. ENVIRONMENT

Environment is not a fixed. It was Ruskin , a century ago , who had said that God has lent us the earth for our life time. We are here as a leaseholders, Leaseholder with a huge responsibility and our efforts we are pinned the hopes of billions of people. It falls to us to reconcile the needs of the livings with our obligations to future generation. We have to find a balance between the needs of people and environment in which they live. We have to find a balance between the exploitation of that environment which vital to its survival. We have to find a balance between the needs of the living beings and our obligation to the future generation.

Much of the damage that we have done to our environment has been inflicted not out of greed or malice , but out of our ignorance. I suspect that for many of us it was not until we saw the pictures of earth taken from outer space that we realised just how small , fragile and precious our globe is. We know the effect of acid rain. We know the importance of the rainforest for climate, for animals and for the plants. We have recognised that earth is our common inheritance and we are setting about the task of managing it for the common good. JOHN MAJOR opined today the international community of nations with the central challenge of fundamentally improving cooperation in through field of global environmental protection.

### IV. SUSTAINABILITY

As often quoted, sustainable development is defined by UN World Commission on Environment and Development as " Development that meets the needs of the present without compromising the ability of future generations to meet their own needs". UNCED Rio-Janerio had further defined It like a balanced development because economy, ecology and social needs. An ever increasing shift of rural population to mining industry and subsequently to urban areas requires widespread adoption of sustainability.

### V. MINOR MINERAL

Mines and Minerals Development and Regulation Act 1957, under Act-3(e), says Minor Minerals means building stone, gravel, ordinary clay, ordinary sand other than sand used for prescribed purpose and any other material which GOI may by notification in Official Gazette declare to be a minor mineral. The minor mineral are by majority, barring a few, are operated by small mine operators who are in unorganised sector, with limited investment and limited production and mostly manual. Mechanisation ranges from nil to nominal.

### VI. ISSUES RELATED TO ENVIRONMENTAL & SOCIAL ETHICS IN MINING OF MINOR MINERALS IN INDIA

Stake holders for environmental binding on mining minerals includes, Mine operators, State Government, Ministry of Environment and Forest Conservation GOI through its Pollution Control Board and the respective Regional Office. Ethically it is expected of mine operators to pay the Govt Revenue in time and right amount to discharge it's social responsibility towards the nation. IRMA specify that there has to transparency of revenue payment. IRMA Standards says that the capacity of governments to effectively manage and disclose material payments and revenues received from mining industries derived from the extraction of a country's mineral wealth has an impact on reducing poverty or generating broader economic growth or benefit than may have otherwise been possible. Increased transparency of material payments to and revenues received by the host country government can be one step toward addressing this matter. Governments, companies and civil society working together to improve openness and accountable management of revenues from natural resources allowing citizens to see for themselves how much their government is receiving from their country's natural resource.

The purpose of this is to increase the transparency of material payments made by mining companies and/or received by governments, providing communities and the general public with the information they need to understand and assess the fairness of financial arrangements related to mining operations. It is ethical for minor mineral industry as well to pay all applicable tax and revenue to Govt. Payments Transparency Requirements Means of Verification of the mine operators of production entitlement, royalties, profit tax, dividend licence fees, rental fees, entry fees and other considerations for licences and/or concessions and any other significant payments and material benefit to government.

## VII. CHALLENGES IN ENVIRONMENTAL COMPLIANCE IN MINOR MINERAL SECTOR

Before 2008 environmental regulations were restricted to major minerals only. But through a detailed survey it was revealed that though activities in minor minerals mines were very restricted, mainly manual and production was also limited causing limited damage to environment. But detailed survey and study revealed that collectively these small mines inflicted heavy damage to regional environment.

Minor Minerals came in preview of EC clearance in 2008 through a notification by MOEFC. All minor mineral operators have to obtain Environmental clearance from MOEF along with NOC from Chief Warden ( Wild life ) before commissioning mining operations.

### 7.1. ETHICS AND MINOR MINERALS OPERATORS

Unethical practice in minor mineral mines and its consequences are well evident.

On pretext of small scale of mining, low profit, low production, they show unwillingness to comply with any Law of land related to Labour.

The operators unwilling pay the minimum wage. They feel that they are paying high wages than they get in return. It's only Governments enforcement, regulation, fine that pay the wages. In Cannonyence with Union's and Enforcing authorities, they try to find some ways to pay less and skip or avoid to pay fringe benefits like PF. Bonus, Leave and benefits as provided in Labour Laws.

Major environmental issues like poor mineral recovery, huge waste generation, no concern to social development, air and water pollution are major issues in present minor mineral sector. Breach of ethics and its principles in mining is not acceptable to society. Every mine operator has to take social license before mining.

Responsible mining leads to sustainability and ethical system and Vice-versa. However IRMA Standards -16, has prescribed certain standards of Ethical system for mine operators to abide. These have been summarised as below:

#### 1. Revenue and Payments Transparency: IRMA Standards

The capacity of governments to effectively manage and disclose material payments and revenues received from mining industries in resource rich countries is sometimes underdeveloped. Revenues derived from the extraction of a country's mineral wealth sometimes have a lower impact on reducing poverty or generating broader economic growth or benefit than may have otherwise been possible. Increased transparency of material payments to and revenues received by the host country government can be one step toward addressing this matter.

Governments, companies and civil society working together to improve openness and accountable management of revenues from natural resources allowing citizens to see for themselves how much their government is receiving from their country's natural resource.

The purpose of this chapter is to increase the transparency of material payments made by mining companies and/or received by governments, providing communities and the general public with the information they need to understand and assess the fairness of financial arrangements related to mining operations. It is ethical for minor mineral industry as well to pay all applicable tax and revenue to Govt.

#### Payments Transparency Requirements Means of Verification

- a. The host government's production entitlement.
- b. National state-owned enterprise production entitlement.
- c. Profits taxes.





- d. Royalties.
- e. Dividends.
- f. Bonuses, such as signature, discovery and production bonuses.
- g. Licence fees, rental fees, entry fees and other considerations for licences and/or concessions.
- h. Any other significant payments and material benefit to government.

## 2.FAIR LABOUR and WORKING CONDITION, IRMA STANDARD

There are existing standards that aim to protect labour rights and ensure fair working conditions. Workers having first-hand knowledge of environmental, human rights and labour practices must have the right to participate in the verification process without fear of employer retribution, as needed by the independent auditor. This can be best guaranteed by workers having the right to freely establish or join trade unions of their choosing without employer interference and through protections provided in collective bargaining agreements.

### IRMA Objectives

The objective is to ensure that the social and economic well-being and health of workers is maintained or enhanced. This will be accomplished by ensuring that companies protect the basic rights of the workers they employ directly and those that are employed by its contractors and suppliers

### Actual Status in Kotah Stone Mine ( Minor mineral)

In compliance to Indian Labour laws no worker is allowed to work for more than 8hrs/day or 48hrs/ week

Each worker is allowed one day off/ after 48hrs working. In case work is of continuous nature (24x7), each worker is given one day off by rotation.

\*Employment of females is prohibited after sunset.

\*Payment of PF, Gratuity, Paid leave, Bonus, Medical care. Payment direct transfer to Bank a/c, Children creche for female workers drinking water at work place, high level of safety standards at work level, infact there was sharp reduction in mining accidents.

\* Paid leave is given to each worker @rate prescribed I'd Act.

\*Equal remuneration to male-female workers for same nature of job.

Each worker, at the time of appointment, is given 7 days initial training in Vocational training centre. Periodic training is organised to develop skill.

\*Local workers given preference, +80% workers from close-by villages. Skill development and promoting entrepreneurship among local workers on various mining activities, awarding contracts.

\*Workers are free to form and join a Union for addressing their problem before management.

\* All workers are enrolled in a Register of Employment with his personal details. A unique code of identification is given to each worker.



\* There is participation of worker in Safety Committee, Labour Welfare Committee, PF Committee and other where interest of worker is involved.

The intent of this issue is to ensure that a company provides a safe and healthy environment that protects and promotes workers' health and their working capacity. This will be accomplished through consultation and cooperation with workers and/or their representatives to identify workplace hazards and risks, implement measures to eliminate or minimize workplace hazards and risks, and develop and provide information and training programs to promote workplace safety and health. The number and nature of occupational illnesses, injuries or fatalities.

Actual Status in one of stone mine extracting Kotha Stone adopting Responsible Practice.

Each worker is given safety gadgets as required and prescribed under Indian Mines Act. The innovated clean technology has not only reduced mine accidents to 1/6th but has also helped in improving work efficiency by 2.5 times.

The use of water at pressure for cooling diamond tool has helped in creating a cool and comfortable working environment at working level.

In the innovated technology many manual, hazardous and ordeous operations have been mechanised reducing physical fatigue and mental stress and reducing personal injuries.

Continuous training on job and in class has helped in reducing injuries improving work performance.

With clean working floor probabilities of injury from slipping and falling has almost eliminated.

With clean floor head loading of KS slabs/tiles and carrying distance away has reduced as transport vehicle can be parked close to stacks. Many accidents have been eliminated.

Malaria has been a dreaded disease but GOI campaign for Malaria eradication has been of great success. Besides State Govt efforts lessee Itakes adequate measures against malaria mosquitoes by avoiding standing water, sprays and creating health awareness among workers. Setting up dispensary at mine level for immediate aid to such worker and his family member.

Another serious problem found among mine workers is TB. Yet dust is created at drilling site and vehicular movement within mine area. Kotha Stone does not contain free silica but it is intrinsically held and does not cause Silicosis ailment. However inhaling dust certainly effects lungs if exposed over a period of time. Besides this consumption of alcohol, in-sanitation and food deficiency leads to TB.

No heritage falling area, adequate R/R plan for shifting habitation close to mining area.

Diverting pumping water to nearby agriculture fields, sharing BCS excavated from mine area for improving land status.

Making good arrangement of drinking water even in residential colonies, setting up primary schools at mine level, setting up college for higher studies,

Human Rights: No discrimination among cast, religion among workers, accidental compensation as per law.

## 7.2.Social Ethics

The objective is to ensure that the social and economic well-being and health of workers is maintained or enhanced. Social Ethics bind the operators to adopt fair labour practice and create healthy working conditions. There are existing standards that aim to protect labour rights and ensure fair working conditions. Workers having first-hand knowledge of environmental, human rights and labour practices must have the right to participate in the verification process without fear of employer retribution, as needed by the independent auditor. This can be best guaranteed by workers having the right to freely establish or join trade unions of their choosing without employer interference and through protections provided in the collective bargaining agreement.

This will be accomplished by ensuring that companies protect the basic rights of the workers they employ directly and those that are employed by its contractors and suppliers. Government has laid down Indian Labour laws governing working conditions, payment of wages and other benefits such as PF Bonus, earned leave, medical care, gratuity and other social benefits. The mine operators including those mining minor minerals are expected to comply to discharge their social duties. The intent of this issue is to ensure that a company provides a safe and healthy environment that protects and promotes workers' health and their working capacity. This will be accomplished through consultation and cooperation with workers and/or their representatives to identify workplace hazards and risks, implement measures to eliminate or minimize workplace hazards and risks, and develop and provide information and training programs to promote workplace safety and health.

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## VIII. ISSUES RELATED TO SUSTAINABILITY IN THE MINING OF MINOR MINERALS.

The minor mineral are by majority, barring a few, are operated by small mine operators who are in unorganised sector, with limited investment and limited production and mostly manual. Their most concern is their profits. They don't believe in compliance of any law. They feel environmental compliance as additional financial burden rather than as integral part of his mining activity.

### 8.1. Sustainable Development

Mining is a complex and intensive process that can have major environmental and social impact. Even in the best managed mine some degree of disturbance is inevitable. In some cases the potential of harm may mean that a decision not to mine may be best decision. However in most cases the most negative social and environmental impact can be avoided/ minimised if the lessee operate the mine according to best practice standards and adopt responsible mining which is committed to Sustainable Social Development

### 8.2. Responsible Mining.

IRMA-16 has elaborated the requirements of standards in the field of environmental responsibility, water quality and quantity, mine waste management, air and noise quality, greenhouse gas emissions, protected areas, biodiversity outside officially protected areas, reclamation and closure, delivering benefits, environmental and safety impact assessment (EIA) beside Working conditions, occupational health and safety, human rights due diligence and compliance, mining and conflict-affected or high-risk areas, HIV/AIDS, tuberculosis (TB) and malaria 57, obtaining community support and

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## IX. CONCLUSION

Ethical practices and Responsible mining is more sustainable, environmentally friendly and safe at serves social ethics. In India, unfortunately minor mineral operators are always apprehensive of high cost in such system and instead of abiding laws of land they try to manage at cost. Good social relations always proved to be productive and maintain industrial harmony . These practices are very productive and cost effective per unit of production.

## REFERENCES

1. **Payment of Wages Act, 1936,**  
(ii) **Minimum Wages Act, 1948,**  
(iii) **Payment of Bonus Act, 1965,** and  
(iv) **Equal Remuneration Act, 1976.**
2. The **Mines Act, 1952** contains **provisions** for measures relating to the health, safety, and welfare of workers in the coal, metalliferous and oil **mines**. The **Act** prescribes the duties of the owner to manage **mines / mining** operation and the health, safety in **mines**.
3. Mine Rules-1955 GOI.
4. IRMA Standards-2008 for Social Ethics and Sustainable Developments





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