

## **CHAPTER – IX**

### **SOCIO-ECONOMIC IMPACT OF MINING**

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## CHAPTER IX - SOCIO ECONOMIC IMPACT OF MINING

### 9.1 Introduction

The MMDR Act 1957, Rules and Regulations and the postulates of CSR prescribe adequate safeguards for scientific, sustainable and eco-friendly mining. Accordingly, the lessees and regulators should strive to actively engage with all stakeholders and inform them of inherent risks and deploy effective measures to mitigate them. Lessees associated with mining should also provide a safe work place environment and means for training and career advancement for labour employed in the mines, besides desisting from employing children and forced labour. Measures should also be taken by lessees to check and prevent pollution and manage natural resources in a sustained manner, adopt environment friendly production methods and undertake activities for economic and social development of communities and geographical areas particularly in the vicinity of business. Failure of Government in enforcing the statutory requirements under the Act, Rules and regulations will have its ill effects on the environment and other Socio-economic aspects besides causing environmental pollution affecting the lives of humans and livestock.

### 9.2 Environmental Pollution

Air quality monitoring data obtained by us from the KSPCB, Bellary Region, for the years 2007-08 to 2009-10 revealed consistent increase in air pollution in Bellary District. Against the permissible limit of Respirable Suspended Particulate Matter (RSPM) at  $100 \mu\text{g}/\text{m}^3$  and Suspended Particulate Matter (SPM) at  $200 \mu\text{g}/\text{m}^3$ , the pollution level of RSPM ranged between 103 and 1,119 while that of SPM ranged from 201 to 1,195 as per measurements recorded during the period.



Generation of dust during transportation in Sandur Taluk

The higher level of air pollution liberally contributed to the growth of diseases like Respiratory infection and Tuberculosis (TB) in the mining taluks of Hospet and Sandur as abstracted below:

Years	Respiratory Diseases		T.B.	
	Hospet	Sandur	Hospet	Sandur
2006	9,706	14,902	55	46
2007	4,698	13,165	95	86
2008	5,189	12,882	71	88
2009	7,252	11,756	61	88
2010	10,369	20,251	95	3

Source: Health and Family Welfare Officer, Bellary

The growth in respiratory diseases due to air pollution showed an increasing trend due to the effect of growth in mining activities.

### 9.3 Impact of Mining on Animal Husbandry Sector

As per the Report on “Impact of mining on animal husbandry sector” furnished by the Deputy Director, Animal Husbandry and Veterinary Services, Bellary, the 18<sup>th</sup> Census of livestock in Bellary, Hospet and Sandur taluks conducted in 2007 registered a considerable reduction in growth rate and population of cattle/buffalo compared to the 17<sup>th</sup> Census (2003) as detailed below.

Year	Bellary		Hospet		Sandur	
	Cattle	Buffalo	Cattle	Buffalo	Cattle	Buffalo
2003	4,859	6,265	1,632	435	16,562	3,011
2007	2,651	1,160	1,262	193	14,977	2,866
Growth rate percentage	(-) 38	(-) 43	(-) 23	(-) 56	(-) 10	(-) 5

Source : Department of Animal Husbandry and Veterinary Services

The current estimates made by the Veterinary authorities reported that (2010-11), the livestock population have declined in the mining affected villages. It was also reported that the decrease in the livestock population was due to:

- (i) decrease in availability of grazing land due to mining.
- (ii) nutritional deficiency disorders due to non-availability of quality fodder.
- (iii) health Hazards.
- (iv) high Manganese content in water and soil.
- (v) contamination of water source and fodder due to toxic materials used in mining.
- (vi) increased susceptibility to diseases of respiratory, digestive and reproductive systems.

It was also observed that while the population of livestock declined over the years, the incidence of various diseases was on the increase as seen from the information furnished to audit on livestock by Deputy Director, Animal Husbandry and Veterinary Services, Bellary treated for various diseases during the years 2006-07 to 2010-11 as shown below.

Year	Respiratory Diseases			Digestive Diseases			Endocrine Diseases		
	Cattle	Buffalo	Goat/ Sheep	Cattle	Buffalo	Goat/ Sheep	Cattle	Buffalo	Goat/ Sheep
2006-07	9,238	5,514	14,782	20,949	11,217	23,775	886	641	133
2007-08	10,576	6,267	15,621	22,054	11,018	42,750	1,386	673	160
2008-09	10,467	6,227	15,896	16,417	8,744	41,517	1,566	693	224
2009-10	8,384	4,311	12,220	18,424	9,093	26,001	1,393	665	282
2010-11	10,379	5,509	14,588	22,867	11,370	28,163	1,317	874	798

#### 9.4 Impact of Mining on Agriculture

Based on the socio economic report for the year 2009-10 prepared by the Statistics Department, the area under cultivation in Bellary declined from 4,79,188 hectares in 2005-06 to 4,36,067 hectares in 2009-10 showing a reduction in agricultural operation to the extent of 43,121 hectares. Consequently the area of barren lands increased to 1,24,157 hectares in 2009-10 from 81,036 hectares during 2005-06. Similarly, information obtained from Minor Irrigation Division, Bellary also revealed that the area of irrigated land consistently reduced from 2,324.80 hectares in 2001-02 to 2,192.51 hectares during 2010-11.

As per the Report of the Joint Director of Agriculture, Bellary on the area affected due to mining, a large area of land was rendered unusable for agriculture besides causing crop loss due to dust deposits on plants which affected the photosynthetic process leading to retarded growth of plants.

(Areas in Ha)

Particulars	Hospet	Sandur	Bellary
Areas unsown due to digging and dumping	1,050	1,858	40
Crop loss due to dust deposits.	2,615	3,700	2,030



Agricultural area dug up for iron ore in Sandur Taluk

The Agricultural Department attributed the reduction in cultivated area and crop loss to digging and dumping of iron ore resulting in loss of fertile top soil, alterations in land structure making the land unfit for cultivation, loss of vegetation due to erosion of top soil and crust formation in arable lands due to water movement. Unscientific mining and transportation of ore also caused dust deposits on plants resulting in reduced photosynthetic process causing loss of yield and quality of the product.



Dust deposition on banana crop in Sardur Taluk

Rampant mining activity also resulted in farmers and farm labourers engaging in mining activity neglecting agriculture operations leaving the fields barren.



farm lands left barren in Sandur Taluk

### **9.5 Encroachment of lands by mining companies**

The Hon'ble Supreme Court ordered, in August 2011, for survey of the mining leases in Bellary, Hospet, Sandur, Chitradurga and Tumkur areas to detect forest encroachments and mining outside its allotted areas. The survey work was entrusted to National Institute of Technology, Suratkal (NITK). As per the survey report submitted to the CEC, 166 lease holders encroached 1,606.91 hectares of land.

As per the details obtained from the Deputy Conservator of Forest, Bellary, 931.58 Ha of forest area was encroached by the mining companies between 2008-09 and 2009-10. Details of the encroachments for the years 2006-07, 2007-08 and 2010-11 were not furnished.

Besides, a total of 944 forest offence cases were reported to have been booked by the Forest Department during the year 2006-07 to 2010-11 towards illegal mining, illegal transportation, waste dumped outside the lease area, overloading etc., in Bellary District. The rampant encroachment of forests and illegal mining in forest area contributed to environmental degradation, besides being unlawful.

## **9.6 Child Labour**

Uncontrolled mining in the District of Bellary also permitted child labour in mines. Though statistics on child labour employed in mining activities were not on record, report on prosecution against 123 employers under child labour Act in Hospet and Sandur circle involving 167 children was indicative of employment of children below 14 years of age in mines. Evidently, promotion of child labour apart from being unlawful directly affected the sustained development of the Society.

Out of 123 cases, 98 cases were acquitted due to insufficient evidence and documents to prove the existence of the establishment and age, 6 cases were abated due to death of the accused while in 9 cases penalty has been ordered. 10 cases were reported to be still pending.

Regarding socio-economic issues such as impact of mining on environment, animal husbandry, agriculture, encroachment of forest lands and child labour, the Department stated that the CEC had recommended for setting up a Special Purpose Vehicle under the Chairmanship of the Chief Secretary and also proposed that the levies and penalties to be collected for illegal mining activities may be used exclusively for the socio-economic development, conservation and protection of forest, development of common facilities such as maintenance and widening of the existing roads, construction of alternate roads, conveyor belts, railway siding, etc., for the transportation of iron ore. The matter relating to the plan of action by the Special Purpose Vehicle is being examined by the Government.

## **9.7 Damage to roads due to overloading of mine lorries**

In the deliberations (May 2007) for appointment of the High Level Committee for finalisation of Mining Lease Applications, the estimated loss on maintenance of State Highways, District Major Roads and Bridges damaged due to the transportation of iron ore was stated to be ₹ 1,709 crore (Chief Engineer, Communications and Buildings, South Zone - ₹ 830 crore Chief Engineer, Communications and Buildings, North Zone - ₹ 879 crore). Details of the expenditure were not furnished by the Chief Engineers.



State Highway-49 Road in Sandur area damaged by mine lorries

Out of three Public Works Divisions test checked, scrutiny of records in the Bellary Public Works Division revealed that during the years from 2006-07 to 2010-11 an expenditure of ₹ 24.29 crore was incurred towards maintenance of roads damaged due to overloaded mine lorries.

In Mangalore National Highways Division (NH 17 and NH 48) the percentage of overloaded mine lorries during 2007 and 2008 ranged between 90.16 per cent and 100 per cent. Information on premature damages to roads due to overloaded mine lorries were not furnished by the Executive Engineer. The Executive Engineer was, however, of the opinion that damage due to overloading cannot be attributed to mines vehicles only. Information from Dharwad Division is still awaited.

### 9.8 Results of survey on impact on Socio-Economic conditions

A survey of local opinion regarding mining was conducted by audit through personal interaction with the villagers, Social workers, NGOs, Village Panchayat bodies of Hospet and Sandur taluks. Results of the survey indicate that the stakeholders largely concurred with the prevailing opinion about the adverse impact of mining on environment, water and Air pollution, Agriculture, livestock, Social life and spread of diseases affecting both human livestock as discussed above. The public opinion also speaks about the existence of child labour and forest degradation besides disturbing the fabric of Social life.

Results of opinion poll on the adverse impact on various socio-economic aspects are expressed as under:

Particulars	Pollution of Air and Water	Agricultural loss due to mining	Spread of diseases to mankind	Spread of diseases to livestock	Loss of forest cover	Child labour in mines	Whether mining affected social life	Whether to restart mining
Total opinions obtained	67	67	67	67	67	67	67	67
Opinions favouring the impact	60	53	58	55	62	35	49	48 (Yes)
Percentage	90	79	87	82	93	52	73	72



Evidently, majority opinion concurred with the adverse impacts of mining on the various socio economic aspects of human life. However, 72 percentage of the opinion favoured restarting mining activity only if it is taken up in a scientific and controlled manner.

## 9.9 Conclusion

We noticed that higher level of air pollution contributed to the growth of diseases like tuberculosis and other respiratory infections in the mining taluks of Hospet and Sandur. The growth in respiratory diseases due to air pollution showed an increasing trend due to the effect of growth in mining activities. Besides, the growth in the mining activities also increased the incidence of various diseases in livestock.

The cultivation in Bellary declined from 4,79,188 hectares in 2005-06 to 4,36,067 hectares in 2009-10 showing a decline in agricultural land to the extent of 43,121 hectares. Consequently, the area of barren lands increased at an alarming rate of more than 53 *per cent* to 1, 24,157 hectares from 81,036 hectares during the corresponding period.

Similarly, information obtained from the Minor Irrigation Division, Bellary also revealed that the area of irrigated land consistently reduced from 2,324.80 hectares in 2001-02 to 2,192.51 hectares in 2010-11.

Unscientific mining and transportation of ore also caused dust deposits on plants. Rampant mining activity also resulted in farmers and farm labourers engaged in mining activity neglecting agriculture operations leading to the fields going barren.

Report on prosecution against 123 employers under Child Labour Act in Hospet and Sandur circles involving 167 children was indicative of employment of children below 14 years of age in mines. Evidently, promotion of child labour apart from being unlawful would affect the sustained development of the society.

## 9.10 Recommendations

The Government may consider evolving a participatory approach by involving local population after a thorough study of likely impact on life, lifestyle and livelihood of the communities for greater common good before grant of mining leases.