PART : II

INTRODUCTION

CONSERVATION (PRESERVATION) AND SYSTEMATIC DEVELOPMENT OF IRON ORE

One of the species of National Wealth is iron ore. Conservation of this mineral is of prime importance for industrial development. Indian legislature has recognized it in Section: 18 of the Mines & Minerals (Development & Regulation) Act, 1957.

Section **:** 18, inter-alia, directs the Central Government to take all such steps as may be necessary for**:**

(a) the conservation (Preservation)
(b) and systematic development of minerals in India

Systematic development of minerals in India would require**:**

(a) exact estimate of reserves available
(b) reasonable estimate of resources from where probable reserves can be estimated.

This, inter–alia, would require opening of new mines. For that purpose, exploration is necessary.

For this, it would be worthwhile to refer to:

A

(REPORTS FOR EXPLORATION)

(i) DOCUMENT ON STRATEGY FOR EXPLORATION, EXPLOITATION AND DEVELOPMENT FOR IRON ORE IN INDIA, PUBLISHED BY THE SUB–GROUP ON IRON ORE in India (January, 2006)

(ii) MINERAL POLICY ISSUES IN THE CONTEXT OF EXPORT AND DOMESTIC USE OF IRON ORE IN INDIA - REPORT - FEBRUARY 2008 (INDIAN COUNCIL FOR RESEARCH ON INTERNATIONAL ECONOMIC RELATIONS)

(iii) ECONOMICS OF SPONGE IRON AND STEEL PRODUCTION (SEPTEMBER, 2008) BY STEEL AND NATURAL RESOURCES STRATEGY RESEARCH, VASANT KUNJ, NEW DELHI

(iv) IRON ORE – STATUS AND FUTURE PROSPECTS" by M. S. Jairam, Director, Geological Survey of India

(v) IBM REPORT, 2009, AND PROVISIONAL FIGURES, AS ON 1-4-2010, SUPPLIED BY IBM, FOR IRON ORE

B

(ILLEGAL MINING)

(vi) 19TH REPORT OF STANDING COMMITTEE ON COAL & STEEL which highlights menace of illegal mining.

(vii) Menace of Illegal Mining due to export of Iron Ore

(viii) VIEWS OF

(a) State of Karnataka

(b) State of Maharashtra

(c) State of Orissa, and

(d) Article "Drawn of Wealth" reported in THE HINDU dated 14th March, 2011

(e) Preservation of Iron Ore and Illegal Mining due to export

(ix) Final Conclusions

A

(REPORTS FOR EXPLORATION)

(I)

DOCUMENT ON STRATEGY FOR EXPLORATION, EXPLOITATION AND DEVELOPMENT FOR IRON ORE IN INDIA, PUBLISHED BY THE SUB–GROUP ON IRON ORE in India (January, 2006), requires to be referred to wherein, it has been, inter–alia, reported as under **:–**

Geologically, iron ore is owned from following **types of deposits**.

1. Banded Iron Formation of Precambrian age
   a. Archean schist belts**:** Jharkhand, Orissa, Karnataka, Chhatisgarh, Goa (high grade deposits)
   b. Granulite terrain of S. India**:** (Iron Ore Formation) – Tamilnadu and Kerala.

2. Sedimentary Iron Ore Deposits of siderite and limonite composition (30–40% Fe) associated with Iron stone shales of Lower Gondwana age in coal field areas of Bihar, W.B. and Assam.

3. Lateritic ores derived from the sub–aerial alteration of gneisses, schists, basic lava etc. under humid tropical condition.
   Deccan Trap, Chhotnagpur gneisses (30–40% Fe)

4. Apatite Magnetite Rocks of Singhbhum Copper Belt**:** Occur in form of a zone associated with granodiorite on the hanging wall side of Copper lodes.

5. Titaniferous and Vanadiferous Magnetite deposits occurring in form of lensoidal bodies associated with intrusive ultramafic – gabbroic rocks of Singhbhum (Jharkhand), Mayurbhanj, Kendujhar (Orissa) and Southern districts of Karnataka (Hasan and Tumkur districts)

   Magnetite contains microscopic inclusions of Coulsonite (Cr **:** 4–5%) (Fe **:** 55–60%), (V **:** 2–7%) (Ti**:** upto 12%)

6. Fault and Fissure filling Deposits of magnetite within gneisses found at Veldurti and Ramallakota in Kurnool dist., AP (Fe **:** 50–65%, SiO_2 **:** 3–18%)

India is endowed with large and rich resources of iron ores. Iron Ore, a product of enrichment of Precambrian Banded Iron Formation (BIF) is the principal ore mined for iron and steel making. Major iron ore deposits in India are distributed in several geographical locales which could be designated as "zones" on the ground of their geographical settings and based on their proximity to the existing Steel Plants and Ports. (Fig. 1) Thus, five zones designated as Zone – I to Zone – V have been identified in the country on geological, geographical and commercial grounds.

Zone **:** I group of deposits occur in the Bonai Iron Ore range of Jharkhand, Orissa and adjoining areas of Eastern India.

Zone **:** II group comprises the rich deposits of the 225 km long NS trending narrow belt in the states of Chattisgarh and Eastern Maharashtra.

Zone **:** III deposits occur in Bellary – Hospet region of Karnataka.

Zone **:** IV deposits cover the rich magnetite deposits of Bababudan – Kudremukh areas of the same state in South India.

Zone **:** V deposits cover the Iron ore of Goa state including south coastal Maharashtra.

In addition, magnetite rich banded magnetite quartzite occur in parts of Andhra Pradesh and also good deposits in Salem district, Tamil Nadu and neighbouring areas in Kerala. An Iron Ore Resources Map of India shows the distribution of these deposits along with their reserves / resources position.

World resources of Iron ore are placed at 370 billion tonnes against which Indian estimates are at 22 billion tonnes constituting 5.98% of the world total. As per the recently adopted United Nation's Framework Classification (UNFC) of Mineral Resources, the **total**

iron ore resources in the country are placed as 22,108 million tonnes, of which resources of hematite are 11,425.8 million tonnes and magnetite 10,682 million tonnes. Out of the total resources, **reserves of hematite are 6025 million tonnes** and magnetite 286 million tonnes, thus total iron ore reserves being 6311 million tonnes. Iron ore in the country occurs in different grades in form of lumps and fines. **As regards hematites, high, medium, low and other grades account for 921 million tonnes, 2200 million tonnes** and 1279 million tonnes respectively. Resources of low and other grades are required to be beneficiated for the qualitative enhancement of the reserve base.

... ...

"**Further, all the iron ore deposits under leasehold category are mostly partially explored**. If need arises, production capacities at the existing deposits can be enhanced to meet domestic / captive demand and also to increase exports to new markets.

Resources Position as on 1st April, 2000
(Source : IBM Mineral Year Book, 2004)

– India's total in situ resources of hematite and magnetite ores are estimated at **over 22 billion tonnes,** of these Hematite resources constitute 11,426 million tonnes whereas magnetite resources are placed at 10,682 million tonnes.

- Hematite is considered superior owing to its high grade nature, **but such high grade ores are very much limited. Reserves of hematite are estimated at 6025 million tonnes**, distributed mainly in the states of Jharkhand, Orissa, Chhattisgarh, Karnataka and Goa.

- Indian deposits of hematite belong mainly to Banded Iron Formation found in archean to early proterozoic supracrustal belts. The ore occurs in massive, laminated, friable and powdery forms.

- Hematite ore deposits are concentrated more (about 60%) in Eastern India in the states of Orissa, Jharkhand and Chhattisgarh.

- Magnetite, the other principal type of iron ore deposits, occurs in the similar Precambrian rock formations as hematite but essentially with magnetitic mineral composition of volcano-sedimentary derivation. Besides, magnetite (titaniferous & vanadiferous) also occurs as lodes associated with younger gabbro – anorthosite intrusives.

- About 80% of magnetite ore is found in south India – Karnataka, A.P., Tamil Nadu and Kerala. About 73% of these are found in Karnataka alone.

– Of these, hematite reserves constitute 6025 billion tonnes

and magnetite reserves form 287 billion tonnes

Total **6312** billion tonnes

– On breaking up the hematite ore reserves further,

High grade lumpy ore constitute 582 million tonnes

And High grade fines form 80 million tonnes

Total **662** million tonnes

– The vast reserves of remaining 5650 million tonnes of hematite ore are of medium to low grade.

– Additional overall resources as defined by UNFC system come in form of

Hematite ore : 5400 million tonnes

Magnetite ore : 10,395 million tonnes

– Based on exploration work carried out by different Organizations / Agencies during 2000 – 2003 period (Table : 4) total additional reserves estimated come to 678.287 million tonnes."

(II)

MINERAL POLICY ISSUES IN THE CONTEXT OF EXPORT & DOMESTIC USE OF IRON ORE IN INDIA – REPORT – FEBRUARY 2008 (INDIAN COUNCIL FOR RESEARCH ON INTERNATIONAL ECONOMIC RELATIONS)

CONCLUSIONS

In concluding paragraph of the aforesaid Report, it has been stated that the frequently encountered argument that the country's steel industry will run out of iron ore resources within a couple of decades or so does not stand vindicated on scrutiny of the facts. There are strong reasons to expect from international experiences that increased investment in the mineral sector, especially in exploration, will lead to new reserves and resources. Further, the country will still have a lot of hematite iron ore below 55 per cent or iron (Fe), not accounted for currently. These resources may be relatively costly but need not to be written off and ignored. At current prices of iron ore, these assets offer highly attractive conditions for extraction and merchant business involving them. At higher scarcity value, they will gain further importance in future.

At present, **fines are being exported because there is no domestic demand for the same**. This structural imbalance currently experienced in the Indian

iron ore market will perhaps go away if the steel industry plans are to be considered. But plans indicate that we may have a problem exactly of the opposite kind with lumps turning surplus with shortages of fines. Of course, this situation will emerge only if the steel projects shape up as per plans. At present, the progress in almost all the major greenfield projects has been insignificant.

The estimates made in the study even under the most optimistic scenarios do not corroborate the rationality of the threat perception regarding iron ore availability. Exports will also be necessary to maintain a structural balance in the market between production and consumption of lumps and fines. Also, considering the specific problems of Goa / Redi region, exports from there will have to be continued. The bilateral agreements with countries like Japan and Korea would necessitate that such exports at the existing levels may be continued. Exports, thus, cannot be wished away. Exports of iron ore have been undertaken largely by merchant miners in the private sector. Any stoppage to exports could lead to closure of significant mining capacity as the volumes cannot be diverted to domestic use easily.

Closure of mines will involve naturally expected consequences involving loss of economic activities including jobs. A lot of investments made by the mining industry will also get into a jam. Further, at reduced

domestic prices, the mining industry will not be able to mobilize enough resources for investment into this sector. This will leave not only the mining capacity constrained but also outdated with modernization backlogs kept unattended. The move to export restrictions and encouragement to captive mining will also lead to several competition issues in the market. The small and medium size steel makers will have to pay higher prices for iron ore compared to those who will reap the full benefits of low costs and supply security associated with captive mines. It needs to be recognized that captive mining rights are not available at market prices and freely. Also, any benefits for integrating mining and steel making businesses are valid only when the iron ore prices are high in the market. Globally, despite the huge interests of the steel industry to acquire iron ore or coal mines, the mining industry is getting more and more specialized with the high degree of technological advances. They have also been effective in lowering costs of mining with their investments in modernizing mining operations and developing infrastructure. This has provided significant economic efficiency to the system. If opportunities are restricted for the Indian mining companies, they will be deprived of the economies of scale and will remain inefficient forever in global comparison.

(III)

ECONOMICS OF SPONGE IRON AND STEEL PRODUCTION (SEPTEMBER, 2008) BY STEEL AND NATURAL RESOURCES STRATEGY RESEARCH, VASANT KUNJ, NEW DELHI.

PREFACE

In the preface to the said report by R. Gupta, Consultant, Steel and Natural Resources Strategy Research, dated 9.9.2008, it has been stated as under :–

"The rise of the minerals and minerals-based industries in the past few years has involved national governments globally in serious policy debates and decisions on many contentious issues related to these inter-dependent industries. India has not been an exception to this trend. At a time, when a new mineral policy is awaiting enactment, again on account of a lack of consensus on many critical matters, Indian policy makers have been engaged in the issues related to the **external trade and domestic use of iron ore. At one level, the government looks at iron ore from a conservationist point of view in a longer term framework and at another and in the immediate,** it is disturbed by the rise in steel prices causing inflation rate to rise to uncomfortable levels, seeking quick-fix solutions. Surprisingly, the government is being made to believe that the raw materials such as **iron ore and coal have**

been at the root of steel price rise and in turn is the prime mover of inflation in the country. Consequently, the government has taken strong fiscal measures to discourage iron ore exports. More such measures are being contemplated as per reports.

The government also must consider, from a long term policy perspective that most of the large and significant reserves of iron ore have been increasingly leased out to either government owned companies or to steel makers on captive basis. This will reduce the space available for the domestic merchant private iron ore miners in the days to come in a relative as also in absolute sense when their reserves will be depleted"

Apart from the Preface, in the aforesaid study, it has been, inter-alia, reported :–

Para : 1

"It is further to be seen that the **surge in steel capacity/production was fundamentally driven by China** who depended on the blast furnace route for steel making, leading to a rather more than proportionate demand for iron ore."

While iron ore mining companies in many countries took the opportunity to raise production quickly to meet the rising Chinese demand, India, a traditional exporter of iron ore, was better placed to grab the opportunities in the spot market due to freight advantage over Brazil and

the underutilized capacities already in place in the mines. **As a result, India turned a significant exporter of iron ore fines in the world market with almost the entire quantity going to China**.

Para : 20

In India, SAIL, Tata Steel, JSPL and JSW (through JV with Mysore Minerals), among the major producers have captive access to iron ore. In the case of JSW Steel their captive supplies account for only about 20-30 per cent of the total requirement whereas it is total in the case of others. There are several small and medium size iron and steel companies at the moment who have captive iron ore. Many more such units are coming up with captive resources. These units are completely or partially insulated from the dynamics of the iron ore market and have no reason to justify their pricing decisions blaming it on the cost increases on account of iron ore.

Para : 21

The government also must consider, from a long term policy perspective that most of the large and significant reserves of iron ore have been increasingly leased out to either government owned companies or to steel makers on captive basis. This will reduce the space available for the domestic merchant private iron ore miners in the days to come in a relative as also in absolute sense when their reserves will be depleted.

Para : 22

While discussing iron ore in the context of its contribution to inflation, the quantities of iron ore that do not get into the market are accounted for in the weight whereas the fact that these are not sold and the cost of producing them is way below the market price is ignored. This inflates the overall impact of iron ore prices on WPI. The government, thus, projects an adverse scenario, especially exaggerating the impact of the open market transactions in iron ore on the estimation of WPI[2].

[2]. The methods used to estimate WPI especially the products chosen with their weights in the case of iron ore, ferro-alloys and steel, etc. are completely nonsensical and depict clear lack of understanding of the iron and steel industry in the country. It is surprising how the government continues to follow this system and more importantly base major policy decisions on them.

Para : 27

There has been inadequate attention to the fact that **the iron ore industry in India is more in private hands** today than it used to be in the past. High degree of lethargy, leading to stagnation in investment for new capacity despite having access to massive resources has been a common observation. All this happened at a time when the private sector despite limitations of resources

raised production through investment has reduced the share of the public sector and also of the captive mines in the overall production and capacity of iron ore mining in India.

Para : 29

It is not so much **in the revenue foregone** by the industry (a matter to be discussed further) but the policy mindset that seems to be driving many of the government actions in the recent times, especially in the iron and steel sector. **The government, in this new situation, has to look beyond the old mindset of regulation which was associated with and characterized by a system with the public sector holding the critical share in business. It will be a more progressive and economically sustainable act if the government allows the more efficient private merchant industry to grow so that the steel industry can really benefit from the resources within the country. Steel Industry's competitive advantage cannot be stored up in untapped mines.**

In Para : 62, it has been observed as under :–

India's iron ore is still crucial for China's steel makers although one expects them to pay a relatively marginal role in the years to come due to the policy uncertainly created by the Indian government. The point to be noted is that if India remains a net importer of steel and if steel production is reduced in

China due to non-availability of Indian ore, the country's industry is likely to be hit much more than what one expects the conserved ores will deliver.

OPINION

However, in the opinion of this Commission, the above observation overlooks the fact that the Steel Industry in this country will require more and more Iron Ore for manufacturing Steel.

The government, in this new situation, has to look beyond the old mindset of regulation which was associated with and characterized by a system with the public sector holding the critical share in business. It will be a more progressive and economically sustainable act if the government allows the more efficient private merchant industry to grow so that the steel industry can really benefit from the resources within the country. Steel Industry's competitive advantage cannot be stored up in untapped mines.

Further, it also ought to have considered that if the industries are supplied sufficient iron ore and are encouraged for manufacturing steel and steel products, in future import of steel and steel products would not be required.

(IV)

IRON ORE RESOURCES AND EXPORTS

It has been, inter-alia, stated in the Article – "**IRON ORE – STATUS AND FUTURE PROSPECTS**" by M. S. Jairam, Director, Geological Survey of India, as follows :–

"**DEMAND FOR IRON ORE** :

Iron ores produced in India go mainly either into domestic consumption or into export. Iron ore consumption is less than production hence fines generated during production are mostly exported. The growth of steel industry in India during the last three/four years also registered a significant upward trend and is expected to swim depending on overall economic growth rate. The Indian steel industry demonstrated robust growth after the deregulation of the steel industry in 1992. The prospective investors like Tata steel, Tata-Corus, Jindal Power and Steel, Global steel giants POSCO, Arcelar Mittal and other major industrial houses are to invest in the steel sector in India. According to the 11th Plan Working Group on Steel, demand for iron ore would rise to 130 million tonnes by 2011-12. The national steel policy has envisaged the target of steel production at 110 million tonnes by 2019-2020. A target set in the national steel policy suggests a production of 300 million tonnes of iron

ore by 2019-20 to meet export and domestic demand. Urbanization should contribute the development of the construction sector in emerging markets like in India which will further require the augmentation of steel production. For production of 1 ton of hot metal, the requirement of prepared oxide feed (sized lump iron ore, sinter, pellets etc) is usually considered at 1.6/1.5 ton. However, this factor increases with decrease of iron content in the feed.

IRON ORE ISSUES AND CONCERNS

There has been an ongoing debate on the prospect of the iron ore availability with the projected growth of steel capacity in India and whether there is enough iron ore left for export after taking into consideration the long term domestic needs of the country. There seems to be two divergent views – one group led by the mines owners, public and private; SMEs and FIMI, advocating for abundance availability of high grade iron ore resource in the country **while the user groups are voicing their concern on the non-availability of desired quality and quantity of iron ore on a sustained basis until further systematic exploration is undertaken to augment 'Resources' under 'Proved Reserve Base'.** Indian Council for Research on International Economic Relation (ICRER) is also of the view of availability of abundance of iron ore reserves. In the backdrop of such issues and concerns, a realistic step has to be taken keeping in mind

the present resource and reserve position of iron ores, the availability of high grade iron ore, illegal mining problem and augmentation possibilities of iron ore by exploration. This may require streamlining of the present system with regards to regulations and exploration strategies as per the National Mineral Policy 2008. **Rapid depletion, export and inadequate Proved reserve of iron ore in the country would call for modern systematic exploration practices in both brownfield and greenfield tracts to build up additional reserves and resources. Prioritization on a national level is the need of the day.**

INDIAN RESOURCES SCENARIO

India is endowed with huge resource base of 25.24 billion tonnes of iron ore. Hematite and magnetite combined together; 'Reserves (111, 121, 122)' being at 7.06 billion tonnes and 'Remaining resources (211, 222, 331, 332, 333 & 334)' at 18.18 billion tonnes. Of the total reserve base of 7.06 billion tonnes, hematite accounts for 7.0 billion tonnes and magnetite at 0.60 billion tonnes.

The reserves and resources estimated by Indian Bureau of Mines (IBM) in different periods is presented in Table- 2:

Table - 2: Reserves and Resources of Iron ore in India

	Reserve (million tonnes)	Resource (million tonnes)	Total (billion tonnes)
HEMATITE ORE	7004	7626	14.63
MAGNETITE ORE	58.50	10561	10.61

As per UNFC system as on 1.4.2005, India possesses total haematite resources of 14,630 million tonnes of which 7,004 million tonnes are reserves and 7,626 million tonnes are remaining resources. The magnetite resources are placed at 10,619 million tonnes of which only 58.5 million tonnes constitute reserves.

The grade-wise and state-wise category-wise reconcilable reserves of haematite and magnetite are shown in the table – 3 and life indices in table – 4.

Table - 3: Reserves of iron ore (haematite and magnetite) (by grades and states)(In million tonnes)

States/ Grade	Recoverable Reserves (as on 1-4-2005)			
	Proved	Probable	Remaining Resources	Total
HAEMATITE				
Total	4945	2059	7626	14630
By grades				
Lump high grade	537	276	396	1209
Lump medium grade	1183	489	1887	3559
Lump low grade	471	678	899	1438
Lump unclassified	8	9	294	311

Fines high grade	146	98	107	351
Fines medium grade	1071	440	1084	2595
Fines low grade	965	131	539	1635
Fines unclassified	17	5	164	186
Lumps and fines high grade	213	33	127	373
Lumps and fines medium grade	171	189	92	452
Lumps and fines low grade	118	236	248	602
Lumps and fines unclassified	40	80	285	405
Blue dust	NA	NA	NA	NA
Black iron ore	NA	2	13	15
Others	0.7	0.9		
Unclassified	2	NA	NA	2
Not known	0.02	0.7	1487	1487
By States				
Andhra Pradesh	25	15	123	163
Bihar	-	-	55	55
Chhattisgarh	570	190	1970	2730
Goa	268	191	254	713
Jharkhand	2237	257	1541	4035
Karnataka	465	475	736	1676
Madhya Pradesh	21	13	171	205
Maharashtra	10	4	251	265
Orissa	1341	911	2509	4761
Rajasthan	7	4	19	30
Magnetite				
Total	14	44	10561	10619
By grades				
Metallurgical	0.4	0.2	2185	2186
Coal Washery	0.01	3	5	8
Foundry	0.3	0.1	0.3	0.7
Others	0.2	0.7	24	25

Unclassified	13	39	8060	8112
Not known	0.3	0.1	286	286
By States				
Andhra Pradesh	NA	NA	1463	1463
Bihar/Jharkhand	0.01	3	9	12
Goa	11	39	164	214
Karnataka	NA	NA	7811	7811
Madhya Pradesh	NA	NA	NA	NA
Maharashtra	0.5	0.1	NA	0.6
Orissa	NA	0.2	0.05	0.2
Rajasthan	3	1	522	526
Tamil Nadu	NA	NA	481	481

NA: not available source: IBM

Table – 4: LIFE INDICES OF IRON ORE
(Unit in '000 tonnes)

Mineral	Total Resources as on 1.4.2005/ 1.4. 2010* (Resources considered for life index in Parenthesis)	Resources as on 1.4.2012 (Resources considered for life index after depletion of production from 2005-06 to 2011-12/& 2010-11 to 2011-12.	Estimated domestic production during 2011-12	Life index beyond 1.4.2012
Iron ore Haematite & Magnetite * Unit- Million-tonnes	25250 (12844)	23853 (11447)	200	**57**

- Figures as on 1.4.2010 source: IBM

[PAGE : 8]

To achieve the iron ore demand of the future, strategy should be changed for making available adequate iron ore resources by way of systematic exploration. The real necessity is for vigorous exploration and exploitation matching domestic requirements, export commitments, if any, value additions as well as infrastructure developments. **India must have clear strategy for next 20-25 years for augmenting the resources with proper orientation of exploration in geologically potential domains keeping in view the exploitation of the existing established resources**.

[PAGES : 17–18]

If we look at the Indian scenario it has been observed in many places that along with mining, iron ore deposits are being discovered and explored which ultimately has augmented ore resources. In 1980, the country had 17564 million tonnes of iron ore resources. The production of iron ore from 1980 to 1990 was 470 million tonnes but as on 1990 the resource stood at 22787 million tonnes and between 1990 and 2000, production was 656 million tonnes and in 2000 resources stood at 23588 million tonnes thus showing an increase in the iron ore resource. The resource increased even when GSI was not carrying out any iron ore investigation during this period and the increase was

mainly due to the exploration activity carried out by public sector and other private sector agencies. From 2000-2005, production stood at 532 million tonnes and in 2005 the resources were 25250 million tonnes thus indicating constant increase in iron ore resources if exploration also goes along with exploitation.

It is also worth mentioning that even after extensive mining the resource of hematite iron ore has increased by 3204 million tonnes in five years between 2000 and 2005. Even during this period reserves have also increased from 6025 million tonnes to 7004 million tonnes. The exploration was conducted mainly in the leasehold areas by the mining Companies. Out of 14630 million tonnes of total resources of hematite iron ore resources are 7004 million tonnes which mean there is scope to convert 7626 million tonnes of remaining resources to reserve through detailed exploration and feasibility studies. Of the total resources of 10619 million tonnes of magnetite ore reserves constitute only 206 million tonnes warranting immediate exploration to convert resources to reserve.

The life indices of the high grade lumpy ore (hematite) as on 1.4.2010 will be 10 years and requires immediate attention. Besides controlled utilization of this high grade lumpy ores emphasis should be given for detailed exploration involving close spaced drilling for enhancing current resource position of

high grade lumpy ore in the potentially virgin areas and to probe depth continuity of ores in the freehold as well as leasehold areas. The effort should also be made through R & D for improving the manufacturing processes of sponge iron and also for using more and more medium grade lumpy ore.

In addition, iron ore occurring in different geological formation, if assessed, will augment the iron ore resources of the country. Hence there is scope for assessment in new areas and reassessment in the areas where mining is under operation or under active consideration. The future exploration activities have to be carried out to augment resources over the known deposits which were not explored earlier in totality and in greenfield areas of geologically potential domains.

[PAGES : 22–23]

WAY FORWARD

The present resource and reserve of iron ore of the country can be augmented substantially by carrying out exploration in explored, partially explored and virgin areas. To support the envisaged growth of iron and steel industry for long time and to cater to the other domestic and export need of the country, the following steps are warranted for augmenting the resource and reserve base of the country;

1. Upgrade the probable reserve base to proved reserve (UNFC 111) by undertaking detailed exploration.
   The use of fine and soft iron ores was not feasible earlier; hence proper assessment was not made for the said category, even at cut off grade of Fe-55%.

2. Bring the entire resources of haematite and magnetite to reserve category.

3. Most of the resource estimates of iron ore deposits were made at least three decades ago by national (GSI) and state exploration agencies. These earlier exploration schemes and the final estimates were dictated by the then purpose of exploration, the stage of exploration, the desired category of reserve/resource to be established at the stipulated level of accuracy, size and type of the deposit etc. Deeper level of exploration (beyond 50m vertical depth) has been advocated by many. Later exploration by others has modified these assessments marginally. The present UNFC classification of resource amply demonstrates the urgent need to launch exploration of the inferred category.

4. Undertake systematic exploration over the virgin area to discover newer deposits, which may be followed by systematic detailed exploration.

5. Identification of large deposit should be attempted both by model driven approach and inductive technique.

6. Geological potential for hosting yet undiscovered / concealed iron ore deposits and channel iron deposit (CID) in India is very high, thus requiring immediate attention for carrying out exploration by both national agencies and other private players.

7. To encourage private investment in exploration, the Government should :

   - Ensure total security and continuity of tenure as offered by the present system, which allows private ownership of mineral rights

   - Exploration activities should be encouraged by means of incentives, such as tax benefits

8. Leaseholders should complete the exploration in leasehold areas for assessment of iron ore resources/reserve as per new threshold values within the stipulated time period

9. Most of the deposits in the state of Orissa, Karnataka, Jharkhand etc. are under lease / Reserved/captive mines with public and private sector companies , whose resources were not fully assessed (till the bottom of ore bodies). Exploration should be completed in Reserved area and captive

mines area by the public sector agencies as per new threshold values within the stipulated time period

10. The extraction of iron ore through scientific method of mining, beneficiation and economic utilization.

11. Incentive to be given for adopting latest technology for direct use of fines in iron making or by agglomeration of fines to the form of pellets or sinters as fines forms considerable part of iron ore resource.

OPINION

Taking the aforesaid discussion in the article by Mr. M. S. Jairam, Director, Geological Survey of India, in view of this Commission, it is apparent that

(i) the life indices of the high grade lumpy ore (hematite) as on 1-4-2010 will be 10 years and requires immediate attention; and

(ii) if there is exploration of iron ore **resources** as suggested by N. R. Khan and domestic demand remains at **200000** metric tonnes per year, at the most, iron ore reserves would be exhausted within 57 years.

It is his suggestion that India must have clear strategy for next 20-25 years for augmenting the resources with proper

orientation of exploration in geologically potential domains keeping in view the exploration of the existing established resources.

(iii) Further, this would require systematic exploration and excavation of iron ore through scientific method of mining, beneficiation and economic utilization. All this would take a long time.

(iv) For export also, he has pointed out two diversion views (1) advocating export and (2) other user groups voicing their concern on the non-availability of desire quality and quantity of iron ore on sustain basis **until further systematic exploration is undertaken to augment resources under proved reserve base**.

(v) **Rapid depletion, export and inadequate Proved reserve of iron ore in the country would call for modern systematic exploration practices in both brownfield and greenfield tracts to build up additional reserves and resources. Prioritization on a national level is the need of the day**.

Aforesaid suggestions require serious consideration.

(V)

RESERVES AND RESOURCES

It would be worthwhile to refer to **IBM REPORT, 2009 AND PROVISIONAL FIGURES, AS ON 1-4-2010, SUPPLIED BY IBM, FOR IRON ORE.**

"Iron & steel is the crux for industrial development in a country. The vitality of the iron & steel industry largely influences the economic status of a country. Iron ore being the essential raw-material for iron & steel industry, its mining arguably is the cynosure of all mining activities undertaken by any country. With the total resources of over 25 billion tonnes of hematite (Fe2O3) and magnetite (Fe3O4), India is one of the leading producers as well as exporters of iron ore in the world."

The total resources of Iron Ore are over 25 billion tonnes of hematite (Fe_2O_3) and magnetite (Fe_3O_4) **:–**

"Hematite and magnetite are the most important iron ores in India. About 60% hematite ore deposits are found in the Eastern Sector. About 87% magnetite ore deposits occur in the Southern Sector, especially in Karnataka. Of these, hematite is considered to be superior because of its high grade. Indian deposits of hematite belong to the **Precambrian Iron Ore Series and the ore is within banded iron ore formations** occurring as massive, laminated, friable and also in powdery form. … … … …"

"As per UNFC system, the total resources of hematite as on 01.04.2005 are estimated at 14,630 million tonnes of which 7,004 million tonnes are under reserves category and 7,626 million tonnes under 'remaining resources' category. … … … …"

"As per UNFC system, the total resources of magnetite as on 01.04.2005 are estimated at 10,619 million tonnes of which reserves are merely 58 million tonnes while 10,561 million tonnes are remaining resources. Only 20% resources are of metallurgical grade while 79% resources are of unclassified, not known and other grades. The resources of coal washery and foundry grades are meager. Magnetite resources are mainly located in Karnataka (74%), Andhra Pradesh (14%), Rajasthan (5%), and Tamil Nadu (4%). Goa, Kerala, Assam, Jharkhand, Nagaland, Bihar and Maharashtra together account for the remaining 3% share."

"PRODUCTION, STOCKS AND PRICES :

The production of iron ore constituting lumps, fines and concentrates was at 215.4 million tonnes in the year 2008–09, showing an increase of about 1% as compared to that in the preceding year owing to better utilization of resources and more demand. … … … …"

"Gradewise analysis of the current year's output reveals that, out of total output of 215.4 million tonnes, **iron ore lumps constituted 95.6 million tonnes** or

about 44.4%, fines 119.2 million tonnes or about 55.3% and concentrates 0.6 million tonnes or about 0.3%. Of the total output of iron ore lumps, 41.1 million tonnes or 43% was of grade 65% Fe and above, 39.3 million tonnes or 41.2% of grade 62% to below 65% Fe, 8 million tonnes or 8.3% was of grade 60% to below 62% Fe and the rest 7.2 million tonnes or about 7.5% of the production was of grade below 60% Fe. In the case of iron ore fines, 20 million tonnes or 16.8% of the production was of grade 65% Fe and above, 65.6 million tonnes or 55% of grade 62% to below 65% Fe and balance 33.6 million tonnes or about 28.2% of grade below 62% Fe. The grade of iron ore concentrates produced in Goa was above 64.5% Fe. The average Fe content of iron ore was about 63.5% in both the years....."

"Among the states, Orissa recorded the highest production of 74.1 million tonnes or about 34.4% of the country's production in 2008–09. Karnataka attained the second place with a production of 45.9 million tonnes or 21.3% of the total production followed by Goa 33 million tonnes or 15.3%, Chhattisgarh 30.1 million tonnes or 14%, Jharkhand 21.2 million tonnes or 9.8% and Andhra Pradesh 9.9 millions or 4.6%."

"In 2008–09, a total of 208.7 million tonnes of iron ore was despatched for exports and internal consumption as against 183.7 million tonnes in the previous year. Out of this, 57.5 million tonnes of iron ore comprised

dispatches for exports and 151.2 million tonnes for internal consumption in 2008–09. The corresponding figures for dispatches for exports and internal consumption in the preceding year were 56.1 million tonnes and 127.6 million tonnes, respectively."

Following table would clearly indicate the production of Iron Ore for the 2006–07, 2007–08 and 2008–09.

PRODUCTION OF IRON ORE – 2006–07 to 2008–09 – (By States)
(Quantity in '000 tonnes **:** value in Rs. '000) (Table : 5)

States		2006 – 07		2007 – 08		2008 – 09	
		Qty.	Value	Qty.	Value	Qty.	Value
India	**Total**	**187696**	**142043084**	**213246**	**233790351**	**215437**	**251505200**
	Lumps	88310	75495106	97850	120676600	95572	127678544
	Fines	98240	65930057	114870	112664926	119223	123285202
	Concentrates	1146	617921	526	448825	642	541454
Andhra Pradesh	**Total**	**4985**	**3599272**	**9164**	**11369872**	**9910**	**11124971**
	Lumps	2117	1351889	5186	7141476	4699	4922983
	Fines	2868	2247383	3978	4228396	5211	6201988
Karnataka	**Total**	**40719**	**32130403**	**48990**	**56852999**	**45938**	**45622896**
	Lumps	18946	14592134	21532	23294928	19008	18412090
	Fines	21773	17538269	27458	33558071	26930	27210806
Orissa	**Total**	**64178**	**48069518**	**69883**	**7566652**	**74130**	**92599498**
	Lumps	38300	33740106	41936	55905215	42767	63658574
	Fines	25878	14329412	27947	19771437	31363	28940924

PRODUCTION OF IRON ORE (In Million Tonnes)

Year	Production of Iron Ore (In Million Tonnes) in India
2006	188
2007	213
2008	215

Table – 6(A) : Production of Iron Ore (2007–08)

INDIA	Below 60% Fe	60% – 62% Fe	62% – 65% Fe	65% Fe & above	Total
Lumps	8583	8294	39111	41862	**97850**
Fines	–	34431	60635	19804	**114870**

Table – 6(B) : Production of Iron Ore (2008–09)

INDIA	Below 60% Fe	60% – 62% Fe	62% – 65% Fe	65% Fe & above	Total
Lumps	7151	7974	39342	41105	**95572**
Fines	–	33655	65614	19954	**119223**

I **Annexure**

STATEWISE UNFC RESERVES/RESOURCES OF IRON ORE (HEMATITE)
As on 01.04.2010 (PROVISIONAL) (000' tonnes)

State Name	Reserve	Remaining Resources	Total Resources
All India	**8,093,546**	**9,788,551**	**17,882,098**
Andhra Pradesh	152,217	229,261	381,478
Assam	0	12,600	12,600
Bihar	0	55	55
Chhattisgarh	900,110	2,391,714	3,291,824
Goa	469,844	457,328	927,172
Jharkhand	2,304,142	2,292,478	4,596,620
Karnataka	876,866	1,281,811	2,158,678
Madhya Pradesh	56,814	174,632	231,446
Maharashtra	13,414	269,795	283,209
Meghalaya	0	225	225
Orissa	3,313,000	2,617,232	5,930,232
Rajasthan	7,139	23,420	30,560
Uttar Pradesh	0	38,000	38,000

STATEWISE UNFC RESERVES/RESOURCES OF IRON ORE (MAGNETITE)
As on 01.04.2010 (PROVISIONAL) (000' tonnes)

State Name	Reserve	Remaining Resources	Total Resources
All India	**21,755**	**10,622,305**	**10,644,060**
Andhra Pradesh	0	1,463,541	1,463,541
Assam	0	15,380	15,380
Bihar	0	2,659	2,659
Goa	15,675	206,998	222,673
Jharkhand	912	9,629	10,541
Karnataka	0	7,801,744	7,801,744
Kerala	0	83,435	83,435
Maharashtra	875	486	1,361
Meghalaya	0	3,380	3,380
Nagaland	0	5,280	5,280
Orissa	54	145	199
Rajasthan	4,240	522,590	526,831
Tamil Nadu	0	507,037	507,037

Note : Figures are rounded off.

II

Reserves/Resources of Haematite (Provisional)

As on 1.4.2010 (P)

(By Grade)

(Thousand Tonnes)

State/Grade	Reserves	Remaining resources	Total Resources
All India (Total)	**8,093,546**	**9,788,551**	**17,882,098**
Lump High Grade	1,023,938	474,803	1,498,741
Lump Medium Grade	4,327,691	2,093,623	6,421,314
Lump Low Grade	245,847	1,380,139	1,625,986
Lump Unclassified Grade	69,233	323,420	392,653
Fines High Grade	228,492	130,293	358,785
Fines Medium Grade	711,153	1,395,805	2,106,958
Fines Low Grade	428,296	764,624	1,192,919
Fines Unclassified	1,055	155,297	156,352
Lumps & Fines High Grade	344,241	280,271	624,512
Lumps & Fines Medium Grade	305,700	355,287	660,987
Lumps & Fines Low Grade	235,520	504,191	739,711
Lumps & Fines Unclassified	148,443	225,604	374,048
Black Iron ore	4,520	18,469	22,989
Others	16,924	38,769	55,693
Not Known	2494	1,647,957	1,650,451

(P) : Provisional

Figure rounded off

Source: National Mineral Inventory as on 1.4.2010

III

Reserves/Resources of Iron ore (Magnetite)

As on 1.4.2010 (P)

(By Grade)

(Thousand Tonnes)

Grade	Reserves	Remaining resources	Total Resources
All India (Total)	**21,755**	**10,622,305**	**10,644,060**
Metallurgical	5,565	2,182,111	2,187,676
Coal Washery	856	7,719	8,575
Foundry	455	303	758
Others	2,213	293	2,506
Unclassified	12,041	8,151,582	8,163,622
Not Known	626	280,297	280,923

(P) : Provisional

Figure rounded off

Source: National Mineral Inventory as on 1.4.2010

B

(ILLEGAL MINING)

(VI)

MENACE OF ILLEGAL MINING AND DESTRUCTION OF NATURAL ENVIRONMENT

19th Report of Standing Committee

It would be worthwhile to reproduce some relevant portions of the 19th Report dated 3-8-2008 of the Standing Committee on Coal and Steel, in respect of illegal mining. The same, inter-alia reads as under:

In PART: I, CHAPTER: I, it has been observed that:–

"INTRODUCTORY: – India is endowed with rich mineral resources. With a history of mining activity dating back to the pre–Harappan period, it is today gearing up to become a leading producer and exporter of a range of minerals. In recent years, India has emerged as a leading producer of quite a few minerals, particularly industrial minerals. It is the world's largest producer of mica and ranks 3rd in the production of coal, lignite and bartyes, **4th in iron-ore,** 6th in bauxite and **manganese ore**, 10th in aluminum and 11th in crude sheet. India can take pride in possessing world's oldest zinc technology."

"1.2 Exploitation of the vast mineral resources to meet the growing requirement has been a major

economic activity contributing significantly to the country's industrial development and export trade. India's mineral export constitutes 16% of its total exports. Two States, Chhattisgarh and Jharkhand account for 25 per cent of mineral production and 10 States namely, Andhra Pradesh, Assam, Gujarat, Maharashtra, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal and Karnataka account for slightly less than 50 per cent of production.

1.3 **Ministry of Mines is responsible for the survey and exploration of all minerals** except natural gas, petroleum and atomic minerals and for the mining and metallurgy of non-ferrous metals such as aluminum, copper, zinc, lead, gold and nickel. It is also responsible for the administration of the Mines and Minerals (Development and Regulation) Act, 1957 in respect of all mines and minerals other than coal, natural gas and petroleum. The Ministry has been carrying out survey and exploration through Geological Survey of India (GSI) and Minerals Exploration Corporation Ltd. (MECL). The IBM functioning under the Ministry of Mines is carrying out promotion and conservation of minerals other than natural gas, atomic minerals and minor minerals.

1.4 The Central Government can exercise powers for regulation of mines and mineral development to the extent, such regulation and development is declared by Parliament by law to be expedient in the public interest, as per Entry : 54 of List : I of the Seventh Schedule to the Constitution of India. The State Governments, on the other hand, have been given powers under Entry : 23 of List : II for regulation of mines and mineral development subject to the provisions of List : I with respect to regulation and development under the control of the Union. Parliament has enacted the Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act, 1957) under Entry: 54 of List: I to provide for the regulation of mines and development of minerals under control of the Union.

1.5 In pursuance of the reforms initiated by the Government of India in July, 1991 in fiscal, industrial and trade regimes, the National Mineral Policy was announced in March, 1993. The National Mineral Policy recognized the need for encouraging private investment, including foreign direct investment and for attracting state-of-the-art technology in the mineral sector. Further, the policy stressed that the Central Government, in consultation with the State Governments, shall

continue to formulate legal measures for the regulation of mines and the development of mineral resources to ensure basic uniformity in mineral administration so that the development of mineral resources keeps pace, and is in consonance with the national policy goals.

1.6 Under the Indian Constitution while State is the owner of mineral resources, the Union Government has power to make law regulating exploration and mining. **Though the Indian Bureau of Mines has been mandated with the promotion and conservation of mineral resources of the country, yet the rampant illegal mining has been reported from various States. The menace of illegal mining has been raising its ugly head with impunity. This is amply clear from the fact that there have been 14,504 odd cases of illegal mining detected** in the various parts of the country which is not only indicative of illegal business thriving in the mineral industry **but of an existence of unholy nexus between the mineral mafias and the law enforcement agencies**.

1.7 Under the statutory provisions, no mining operations can be undertaken without a mining lease duly granted, executed and registered by the lessee with the State Government. Any mining activity undertaken outside the ambit of provision

of the Mines and Minerals (Development and Regulation) Act (MMDR Act) 1957 and the rules framed thereunder constitutes illegal mining.

1.8 Taking cognizance of illegal mining, the Ministry of Mines constituted a "Tandon Committee in 1988" for review of the existing Act and Rules and suggestion for further delegation of powers to the State Governments besides suggesting measures to prevent illegal mining. The Tandon Committee recommended amendments to MMDR Act and also recommended measures to prevent illegal mining. Accordingly, a number of amendments were effected in MMDR Act by the Government of India in 1999. **However, these amendments had failed to deter the illegal mining which continues to be unabated.**

1.9 **The conservation as well as systematic and scientific harnessing of mineral resources is the bedrock of economic development of a nation. However, unscientific and unlawful mining has been thriving endlessly causing not only immense loss to the national exchequer but destruction of national environment.** The Government in its efforts to promote and develop mining sector had taken a number of steps and commissioned studies from time to time under National Mineral Policy, 1993. But, the impact

thereof has been far from satisfactory and **the exploration and development of mineral wealth of the country remained unproductive** both economically and socially.

The Committee, therefore, desires that the Ministry should prepare a revised National Mineral Policy in consultation with the State Governments, concerned agencies/organizations and other stakeholders with adequate investment proposals to harness the vast mineral resources of the country and to effectively meet the challenges of future in our strides towards the status of a developed country."

(VII)

THE MAIN CAUSE OF MENACE OF ILLEGAL MINING DUE TO EXPORT OF IRON ORE AND MANGANESE ORE

What is the cause of illegal mining undertaken by the persons engaged in the mining industry ? Technological excellence and economical gains have led to depletion of reserve of high grade iron ore irreversibly. **It would clearly appear from various reports that disproportionate unimaginable profit in export market appears to have attracted many persons in indulging in illegal mining**.

The menace of illegal mining raised its ugly head and is continuing with impunity because of lack of adequate staff, check posts and rampant corruption. The lengthy delayed procedure in imposing penalty (which itself is not deterrent) also encourages the same.

It might be noticed from the various reports that the main supply market is the export market. Export of iron ore and manganese ore to China appears to be the main cause of illegal mining of high grade iron ore.

In the Article "**What bleeds Bellary**" by Paranjoy Guha T..., Ayaskant Das in the Issue dated 31.8.2010, appearing in **Down To Earth** site (http://www.downtoearth.org.in/node/1739), it has been

noted **"**From 2002–2003 onwards, as demand for iron ore from China rose, never–ending lines of trucks would each day transport iron ore from Bellary and the adjoining districts of Tumkur, Chitradurga (in Karnataka) and Ananthapur (in Andhra Pradesh) to ports along the south–western and south–eastern coasts.

… …

Not long ago, only iron ore lumps were exported, but with the advancement of steel-making technology, the demand for iron ore fines from India grew exponentially. The infrastructure projects commissioned in the run up to the 2008 Beijing Olympics fuelled an unprecedented hunger for steel; prices of iron ore soared from around Rs.1,200 per tonne in 2002 to around Rs.6,000 per tonne in 2006–2007.

The quality of iron ore found in Bellary is one of the finest in the world, with an iron content of 60-65 per cent, known as 64 Fe. This ore is exported to countries like China and Japan where it is converted into pig iron and then steel. The demand for the fine ore spurred illegal mining. Officially, Bellary has 58 operational mines. **But 12,000 instances of illegal mining have been detected since 2000. According to one conservative estimate, illegal mining in the region has cost the state government Rs.3,000 crore between 2004 and 2006."**

Statement of Chief Minister, Karnataka State:

This can be visualized from following excerpt from the report (Interim) of CEC in the Writ Petition (Civil) No. 562/2009 filed by Samaj Parivartana Samudaya and others which reads as under:

"The Chief Minister, Karnataka made a statement on the Floor of the Karnataka Assembly, on 09.07.2010 regarding extent of Iron Ore being transported and exported illegally. The year-wise details of the Iron Ore for which permits were granted, the total quantity exported and the quantity illegally exported without any permit, as stated by Chief Minister, Karnataka in the statement, are as under:

Sr. No.	Year	Permitted (M.T.)	Exported (M.T.)	Difference (M.T.)
1	2003-04	25,27,001	45,76,964	20,49,963
2	2004-05	64,51,665	1,16,91,183	52,39,518
3	2005-06	92,99,600	1,14,71,092	21,71,492
4	2006-07	60,55,833	1,08,00,478	47,44,645
5	2007-08	89,73,490	1,47,34,538	57,61,048
6	2008-09	76,64,125	1,10,60,251	33,96,126
7	2009-10	60,71,482	1,31,99,419	71,27,937
Total ➔		**4,70,43,196**	**7,75,33,925**	**3,04,90,729**

It is seen from the above statement that during the period 2003-04 to 2009-10, as much as 304.91 lakh metric tonnes of iron ore have been exported without

valid permits. Further, 71.28 lakh metric tonnes, out 304.91 lakh metric tonnes, was illegally exported in the year 2009-10. At a conservative rate of Rs. 5000 per metric tonnes (f.o.b. value), the **nominal value of the illegally exported iron ore from Karnataka comes to Rs. 15,245 crores**. These figures starkly highlight the massive scale on which illegal mining was going in Karnataka."

It is apparent from the aforesaid statement of the Chief Minister of Karnataka State that menace of illegal mining thrived because of export to China. It is of great concern that as against the permission to extract iron ore for around 47 million tonnes, 77.5 million tonnes of iron ore came to be extracted and exported, mainly to China. These figures are only for high grade iron ore which can be exported.

(VIII)

For verifying whether **inadequate staff and export of iron ore** are the causes for illegal mining, this Commission sent the **questionnaire** to the various states for their views on the subject of illegal mining.

OPINIONS / VIEWS OF STATES OF KARNATAKA, MAHARASHTRA AND ORISSA

(a)

VIEW OF KARNATAKA STATE :

Following questionnaire and answer given by Karnataka State further fortifies conclusion that huge profit margin available from the export market is the main cause of illegal mining.

"5(a) Do you think boom in the export demand for iron ore and manganese ore is the primary factor responsible for illegal mining activities in your State?

Ans. Due to the high price for Steel and Iron products at international market resulted in demand for export of Iron Ore. **The export quality of Iron Ore attracts huge profit margins**. This envisaged not only lessee to export the mineral even common people also involved into this business in the name of trading, processing and transportation of Iron Ore **resulting into illegal mining activities**."

"5(b) Do you suggest that a blanket ban on export of iron ore and manganese ore would help to prevent illegal mining activities in the State ?

Ans. **The banning of export of Iron Ore will really help the growth of individual steel plants which provided lot of employment to the local people and enhances GDP of the country**. All the more state natural resources is conserved for sustainable mining activity and depending industrial growth. **Hence banning of export of Iron Ore is desirable for the benefit of country**."

"5(c) What would be consequences, if such a ban is imposed ?

Ans. If ban on export of Iron Ore is imposed the extraction of Iron Ore will be limited to the demand of the industries with in the country. Thereby adverse impact on of ecology and environment can be prevented. **Further, it can control the illegal mining activity to a greater extent**. As the Iron Ore is a natural Resource **it can be conserved for future generation**, and also results in to development of Indigenous technology for the production of Iron and Steel products."

"5(d) Whether illegal mining activities and trade of minerals illegally mined is taking place under the patronage of any political parties, extremist

elements or powerful local leaders or any other extra - constitutional elements ? If so, indicate such elements.

Ans. It may be observed that many of the mining lessee in one or the **other way are stamped with political parties many of them are in a key position in the political parties**. Their local followers likely to involve into illegal mining activities in the name of Trading, transportation etc., to the Politicians who are in the mining activity may influence the official machinery."

"7(a) Whether poor infrastructure, ineffectiveness and inadequate manpower in the State Directorate of Mines & Geology (or such agency) is one of the causes for failure to control the illegal mining activities?

Ans. This office has the jurisdiction over the entire district but limited numbers of officers to supervise the mining activity and transportation. In this office jurisdiction there are more than 100 mining leases and 150 quarry leases are there, **it is desired to have office in all the talukas and in the places where more mining activity is concentrated with adequate staff and vehicles for better management of mining activity.** It is also desired

to create a network of check posts in all vital places for better control over transportation of minerals.

Every office to be provided with modern survey equipments like DGPS, total survey units, for precise demarcation of boundaries adequate number of powerful vehicles to intercept illegal transporters. Supporting with cranes JCB's and trucks to confiscated and shift unauthorized minerals and vehicles. The staff should be provided with wireless communication system for better co-ordination and swift action upon illegal mining and transportation."

(b)

VIEW OF MAHARASHTRA STATE

Following questionnaire and the answers from Maharashtra State will also support the aforesaid conclusion:

"4(b) Whether any analysis has been done for determining the causes of illegal mining activities in your State ? Which factor(s) do you think are most responsible for the causes of illegal mining activities?

Ans. The spurt in the instances of illegal mining of manganese and iron ore can be attributed to the growing demand of Steel especially during the prior to the **Bejing** Olympics. **Bulk imports by China to fulfill their requirements led to increase in illegal mining and transport**.

The price rise of manganese **was almost 15 – 20 times during the period**. The low grade manganese which fetched a price of Rs.200–300/– tonne was sold for about Rs.4000–5000/–. The export demand followed by steep price rise are the primary causes for illegal mining."

"**Q. No. 5 EXPORT DEMAND**

(a) Do you think boom in the export demand for iron ore and manganese ore is the primary factor responsible for illegal mining activities in your State?

Ans. It is true that **export demand for iron and manganese ore in the neighboring China has led to increase in mining activity and contributed to instance of illegal mining of these minerals**."

"Q.No.4(c) What steps would you like to suggest at the level of State and Central Government Authorities for curbing illegal mining ?

Ans. **Compulsory registration of all the minerals handling agencies to get an exact account of minerals procured and consumed**, imports and exports would be helpful in curbing illegal mining.

Establishing of mineral check posts in sensitive areas would also help in curbing illegal transport of minerals.

Measurement of Mines (quantity of minerals excavated) with the help of sophisticated equipments like Total Station. **Usage of latest technology (Remote Sensing) for monitoring the mining activities.**"

"Q.No.5(b) Do you suggest blanket ban on export of iron ore and manganese ore would help to prevent illegal mining activities in the State ?

Ans. No."

"Q.No.6 Do you think there are limitations of the State Government Authorities to control and prevent illegal mining activities ? If so, indicate what are the limitations and restrictions to act for effectively curbing illegal mining activities ?

Ans. Adequate steps with available man power and resources are being taken by the State Government. **The shortage of designated man power for curbing of illegal mining does effect control and prevention of illegal mining to a certain extent**. Additional staff and vehicle requirements for prevention of illegal mining is under process."

"Q.No.7(a) Whether poor infrastructure, ineffectiveness and inadequate manpower in the State Directorate of Mines & Geology (or such agency) is one of the causes for failure to control the illegal mining activities ?

Ans. **Inadequate manpower, poor infrastructure can be said to contribute towards the failure to some extent, in curbing illegal mining.**"

(c)

VIEW OF ORISSA STATE

"**Q.5 EXPORT DEMAND**

(a) Do you think boom in the export demand for iron ore and manganese ore is the primary factor responsible for illegal mining activities in your State ?

Ans.: The increase in prices of ore due to global demand gave rise to increased mining activities and is perhaps the primary factor providing motives & incentives for illegal mining activities.

(b) Do you suggest blanket ban on export of iron ore and manganese ore would help to prevent illegal mining activities in the State ?

Ans.: In terms of iron ore **it is the fines which are primarily exported while lumpy ore is consumed domestically**. While a blanket ban on exports may **cause a drop in prices and thus lower incentives for illegal mining a holistic view needs to be taken** on this issue. An effective way perhaps could be to introduce a windfall tax on surplus profits with the proceeds going to the State Governments for development activities especially in mining areas.

(c) What would be consequences if such a ban is imposed ?

Ans. (a) The ban will **transfer 'surplus' from mine owners to consumers or industries**

(b) May result in production levels decreasing

(c) Will initially create problems in disposal of fines for which adequate demand is not there at present. **On the other hand may result in development of technology to use fines in the long run.**

(d) Decrease pressure on infrastructure like road & rail **as infrastructure in mining areas has not increased commensurately** with the mining activities due to the boom in prices.

(d) Whether illegal mining activities and trade of minerals illegally mines is taking place under the patronages of any political parties, extremist elements or powerful local leaders or any other extra – constitutional elements ? If so, indicate such elements.

Ans.: Due to huge profits **generated from mining activities, both legal or illegal, local mafias are getting involved** in mining related activities such as transportation and trade of ore etc. and **such elements having political connections or**

patronage cannot categorically be ruled out. For such persons of Keonjhar District were booked under NSA during the year 2010."

"Q.6 Do you think there are limitations of the State Government Authorities to control and prevent illegal mining activities ? If so, indicate what are the limitations and restrictions to act for effectively curbing illegal mining activities ?

Ans.: As stated earlier illegal mining activities can be checked through coordinated efforts of State Government and Central Government agencies. **There is a need for enhancing staff, setting up modern check gates,** making use of IT in monitoring transportation etc for effectively curbing mining activities.

State Government officials may be empowered to confiscate the properties along with minerals involved in illegal mining and mineral trade under the provisions section 21 (4A) of M&M (D&R) Act, 1957.

In case of illegal transportation of minerals across the State border, punitive action on mineral smugglers is not possible owing to lack of definite declaration of jurisdiction.

The MMDR Act, 1957 should specifically define illegal mining activities and provide provisions of mining activities and determination of the lease by the State Government."

"**Q.7(a) Whether poor infrastructure, ineffectiveness and inadequate manpower in the State Directorate of Mines & Geology (or such agency) is one of the causes for failure to control the illegal mining activities ?**

Ans. The State Directorate of Mining and geology needs **to be strengthened in terms of manpower and infrastructure to regulate mining activities and control illegal mining and to take immediate action where such cases are detected.**"

(d)

ARTICLE : "DRAWN OF WEALTH"

Further, it would be worthwhile to refer to the article "**DRAWN OF WEALTH**" reported in **THE HINDU** on Monday, March 14, 2011 written by Prafulla Das which reveals that in Keonjhar District in the State of Orissa, has immense forest as well as mineral wealth. About 30 per cent of its total area has dense forest cover. It sits over vast mines of iron ore, manganese, chrome and other minerals. But its population has benefited little from these. The district has remained at the bottom in terms of development indices. Illegal mining that cost the State huge revenue losses, environment pollution, malaria and some unknown diseases, man-elephant conflicts and so on have plagued it in recent years.

FACILITATORS

For years, the law has taken a back seat in Keonjhar with the mine mafia, private companies, contractors, transporters and **criminal gangs looting the mineral resources at will across the district**. Unregulated mining has wreaked havoc in the region in the past nine years.

What is most shocking is that those in power have been aware of the theft of minerals. Thousands of mineral-laden vehicles rumble along the district's roads from 8 p.m. to 8 a.m. Rules framed to check illegal

mining and trading in minerals are flouted, often with the connivance of the administration.

The mafias operate in a well-organised manner. To facilitate illegal mining, many posts in the Departments of Mines, Forests and Police are kept vacant. **The fact that there have been only six Class IV employees in the Mines Department to handle as many as 20 weighbridges meant for mineral-laden vehicles makes this clear.** Moreover, the number of weighbridges has been too small to cope with the volume of minerals being handled. The government has admitted this in the wake of the expose.

CONCLUSIONS

It is apparent from the statement of the Chief Minister of Karnataka State that menace of illegal mining thrived because of export to China. It is of great concern that as against the permission to extract iron ore for around 47 million tonnes, 77.5 million tonnes of iron ore came to be extracted and exported, mainly to China. These figures are only for high grade iron ore which can be exported.

What emerges, from the views of States of Karnataka, Maharashtra and Orissa, is as under :

(A) STATE OF KARNATAKA :

1. The export quality of Iron Ore attracts huge profit margins.

2. The banning of export of Iron Ore will really help the growth of individual steel plants which provided lot of employment to the local people and enhances GDP of the country.

3. Further, it can control the illegal mining activity to a greater extent. As the Iron Ore is a natural Resource it can be conserved for future generation, and also results in to development of Indigenous technology for the production of Iron and Steel products.

4. It may be observed that many of the mining lessee in one or the other way are stamped with political parties many of them are in a key position in the political parties.

(B) STATE OF MAHARASHTRA :

1. Bulk imports by China to fulfill their requirements led to increase in illegal mining and transport.

2. The price rise of manganese was almost 15 – 20 times during the period. The low grade manganese which fetched a price of Rs.200–300/– tonne was sold for about Rs.4000–5000/–. The export demand followed by steep price rise are the primary causes for illegal mining.

3. It is true that export demand for iron and manganese ore in the neighboring China has led to increase in mining activity and contributed to instance of illegal mining of these minerals.

4. The shortage of designated man power for curbing of illegal mining does effect control and prevention of illegal mining to a certain extent.

5. Inadequate manpower, poor infrastructure can be said to contribute towards the failure to some extent, in curbing illegal mining.

(C) STATE OF ORISSA :

1. In terms of iron ore it is the fines which are primarily exported while lumpy ore is consumed domestically. While a blanket ban on exports may cause a drop in prices and thus lower incentives for illegal mining a holistic view needs to be taken on this issue.

2. Due to huge profits generated from mining activities, both legal or illegal, local mafias are getting involved in mining related activities such as transportation and trade of ore etc. and such elements having political connections or patronage cannot categorically be ruled out. For such persons

of Keonjhar District were booked under NSA during the year 2010.

3. The State Directorate of Mining and geology needs to be strengthened in terms of manpower and infrastructure to regulate mining activities and control illegal mining and to take immediate action where such cases are detected.

(e)

PRESERVATION OF IRON ORE AND ILLEGAL MINING DUE TO EXPORT

From the aforesaid discussion, what emerges is as under :

(i) Parliamentary Standing Committee on Coal and Steel;

(a) **Though the Indian Bureau of Mines has been mandated with the promotion and conservation of mineral resources of the country, yet the rampant illegal mining has been reported from various States. The menace of illegal mining has been raising its ugly head with impunity.**

(b) **However, amendments in MMDR Act had failed to deter the illegal mining which continues to be unabated.**

(c) **The conservation as well as systematic and scientific harnessing of mineral resources is the bedrock of economic development of a nation. However, unscientific and unlawful mining has been thriving endlessly causing not only immense loss to the national exchequer but destruction of national environment.**

(ii) Central Empowered Committee appointed by the Apex Court for verification of illegal Mining; the reports pertaining to illegal mining in States of Orissa, Andhra Pradesh and Karnataka are exhausted highlighting the fact that illegal mining is due to export.

(iii) interim reports of Justice Hegde, Lokayukta, Karnataka for illegal mining in the State of Karnataka are exhaustive also highlighting the fact that illegal mining is due to unimaginable export value of iron ore.

(iv) views of State of Karnataka, State of Maharashtra and State of Orissa (as stated above),

that we have failed to take appropriate steps/actions **for conservation and systematic and scientific harnessing of iron ore** and manganese which is and would be bedrock of development of a nation and that export of iron ore to China is the main cause for illegal mining and its trade.

Further, the mineral which is a national wealth which takes billions of years for its formation is being drained out of the country by way of export. This may be because of **(i) high export prices and (ii) the existence of unholy nexus between the mineral mafia's and the law enforcement agencies.**

Iron ore is the back-bone of modern civilisation. This mineral wealth is required to be preserved. If it is not preserved, future generations would be required to import it for manufacturing machines, automobiles, trains, ships etc.

Hence, for preventing illegal mining and for preserving iron ore, for the time being, export of iron ore is required to be banned. The reasons are:

(i) Undisputedly minerals are a national asset which requires to be properly safeguarded for providing sustained benefits to the entire community for succeeding generations. In any case at least for 3 – 4 generations, we are duty bound to develop and conserve the natural resources, namely, iron ore in the interest of nation. For this purpose, there should be proper mine management plan.

(ii) For this, it would be worthwhile to refer to the observations made by the Hon'ble Supreme Court in the case of M.C. Mehta Vs. Union of India, (2004) 12 SCC 118), which reads as under :

"**Principle 15 of Rio Conference of 1992 relating to the applicability of precautionary principle, which stipulates that where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to**

prevent environmental degradation, is also required to be kept in view. In such matters, many a times, the option to be adopted is not very easy or in a straight jacket. If an activity is allowed to go ahead, there may be irreparable damage to the environment and if it is stopped, there may be irreparable damage to economic interest. In case of doubt, however, protection of environment would have precedence over the economic interest. Precautionary principle requires anticipatory action to be taken to prevent harm. The harm can be prevented even on a reasonable suspicion. It is not always necessary that there should be direct evidence of harm to the environment."

Applying the aforesaid observations, it can be stated that when there are threats of serious irreversible damage, lack of full scientific certainty shall not be used for postponing effective measures to prevent damage. Precautionary principle requires anticipatory action to prevent further harm and depletion of iron ore reserves.

(iii) Undoubtedly, the menace of illegal mining has been raising its ugly head with impunity and at present, it remains uncontrolled. As observed by the Standing Committee unscientific and unlawful mining has been thriving endlessly **causing not**

only immense loss to the national exchequer but also destruction of national environment.

(iv) Considering the present day scenario and staff available with this IBM and State Governments, **it would be difficult to control illegal mining of high grade Iron Ore and its exports. Because the export of Iron Ore is in billions of Rupees, it would be easy to the traders including lease-holders, transporters and other persons to bypass Rules and Regulations and continue in illegal mining by adopting corrupt practices. It would be absolutely difficult to control corruption in the present-day scenario**.

(v)(a) One view is, we are having sufficient reserves of Iron Ore which can meet the demand of the industries in India as well as of the export. However, resources fully explored as they stand are likely to last at the most 57 years as per the report of Mr. Jairam quoted hereinabove. This also is dependent upon systematic planned exploration.

(b) He has also observed that "**the life indices of the high grade lumpy ore (hematite) as on 1.4.2010 will be 10 years and requires immediate attention.**"

(c) In any case, the estimate depends upon resources and probable availability of iron ore from various

fields. To achieve the iron ore demand of the future, strategy should be changed for making available adequate iron ore resources by way of systematic exploration and India must have clear strategy for next 20 to 25 years for augmenting the resources. **It is true that these are high hopes and may take years together for having proper strategy for exploration of iron ore resources.**

(vi) It has also been contended that if there is further exploration then there is likelihood of getting more reserves of Iron Ore and that is the experience of other countries. However, Exploration of resources is one thing and Exhaustion of reserves is another thing. Exploration of resources is to march in a different direction. It has to be a long drawn project which can be hardly connected with the problem of Exhaustion of reserves. Menace of illegal mining has direct connection with Exhaustion of reserves, **Thus, Exhaustion of reserves of Iron Ore and Manganese Ore is a matter of great concern at present**.

It has to be remembered that domestic demand for Iron Ore for production of steel is bound to increase in the present day scenario. More and more industrialists are likely to come forward for production of steel.

For export, Mr. Jairam has pointed out two diversion views (1) advocating export and (2) other user groups voicing their concern on the non-availability of desire quality and quantity of iron ore on sustain basis **until further systematic exploration is undertaken to augment resources under proved reserve base**.

Rapid depletion, export and inadequate Proved reserve of iron ore in the country would call for modern systematic exploration practices in both brownfield and greenfield tracts to build up additional reserves and resources. Prioritization on a national level is the need of the day.

(vii) For domestic consumption, it has been pointed out that number of giant industrialists like JSW Steel Ltd. (Karnataka), Tata Steel Ltd. (Jharkhand), Ispat Industries Ltd. (Maharashtra), Essar Steel Ltd. (Gujarat), Jindal Steel & Power Ltd. (Chhattisgrah), Lloyds Steel Industries Ltd. (Maharashtra) and Jindal Stainless Steel etc. are engaged in this field today and they can develop technique for using iron ore for manufacturing steel and steel products.

It is to be stated that during Global Investors Meet - 2010, State of Karnataka has approved following iron and steel plants.

(1) NMDC Ltd.
(2) Bramhani Industries Ltd.
(3) POSCO - INDIA Pvt. Ltd.
(4) ARCELOR Mittal India Ltd.
(5) Bhushan Steel Ltd.
(6) Surya Vijayanagar Steel & Power Ltd.
(7) Hazira Steel Ltd.
(8) JSW Steel Ltd.
(9) Tata Metaliks Ltd.
(10) VIC Steels Pvt. Ltd.
(11) ADUNIK Metaliks Ltd.
(12) SURANA Industries Ltd.
(13) Shree Renuka Energy Ltd.
(14) Ravindra Trading & Agencies Ltd.
(15) Mahalakshmi Profiles (P) Limited,
(16) Kalawai Ispat and Power Pvt. Ltd.
(17) VSL Mining Company Pvt. Ltd.
(18) Mineral Enterprises Ltd.
(19) Karnataka Steel Pvt. Ltd.
(20) Shakti Steel and Power Industries Pvt. Ltd.
(21) Aradya Steels Pvt. Ltd.
(22) Swastik Steel (Hospet) Pvt. Ltd.
(23) Vishwanath Sugars Ltd.
(24) PMB Metaliks Pvt. Ltd.
(25) SBQ Steels Ltd.

In this set of circumstances for internal consumption, iron ore is required to be preserved.

As observed by the Apex Court in the case of State of T.N. Vs. M/s. Hind Stone etc. (supra), the Mines and Minerals (Development and Regulation) Act, is aimed, at the conservation and the prudent and discriminating exploitation of minerals. Surely, in the case of a scarce mineral, to permit exploitation by the State or its agency and to prohibit exploitation by private agencies is the most effective method of conservation and prudent exploitation.

If we want to conserve for the future, we must prohibit, in the present unjustified, illegal exploration of iron ore and its export.

In the aforesaid set of circumstances, particularly, considering the present days' scenario in the country, it is apparent that **92% of iron ore fines is exported to China to fulfill its requirements. This led to increase in illegal mining, trading and transportation. This has increased menace of Mafia controlling mining activities including trading, transportation and export of iron ore because it has given unimaginable huge profits with less cost and efforts. For this the efforts are put only by exploited labourers working in the field.**

Further, even though common people who were not at all concerned with mining activities are in the business

in the name of trading, processing and transportation of iron ore which has resulted into increase in illegal mining.

Not only this, some persons are connected with political parties and many of them who are in key positions are involved in illegal mining activities in the name of trading, transportation etc.

It is true that iron ore fines is primarily exported and lumps ore is consumed domestically. **Blanket ban on import may cause drop in prices and this would immediately reduce illegal mining.** This would lead to transfer of surplus of iron ore from mine owners to the consumer industries. There may be some initial problem. But finally this may result in development of technology to use fines in few years by industrialists of this country.

(viii) What emerges from the views expressed by the States of Karnataka, Maharashtra and Orissa to the questionnaire, and the Articles referred to above, it is apparent that **the export quantity of iron ore attracts huge profit margins. Even common people are involved into this business in the name of trading, processing and transportation of iron ore resulting into increase in illegal mining activities.**

(ix) Bulk imports by China to fulfill its requirements led to increase in illegal mining and transport. The price rise of manganese was almost 15-20 times. The low grade manganese which fetched a price of Rs.200/- to 300/- per tonne was sold for about Rs.4000/- to Rs.5000/-. **This is a primary cause for illegal mining.**

(x) It is the fines which are primarily exported while lumpy ore is consumed domestically and blanket ban on exports may cause a drop in prices. **Thus, it would result into lower incentive for illegal mining.**

(xi) The banning of export of **iron ore will help the growth of individual steel plants** which would provide lot of employment to the local people and will control illegal mining activities to a greater extent.

(xii) This would also result into development of technology to use fines in a long run.

(xiii) It is pointed out that at present staff is inadequate to control illegal mining. Unless adequate staff is appointed by the State Governments in the Mines and Mineral Department and also adequate supervisory staff is appointed with Indian Bureau of Mines (IBM), it would be absolutely difficult to

control illegal mining. **If the controlling machinery is weak and is understaffed, the illegal mining activities would continue unabated**.

(xiv) As per News-paper Article, **criminal gangs are looting the mineral resources at will in the State of Orissa**. Similarly, in the States of Karnataka and Maharashtra the Mafias operate in a well-organized manner. It is also apparent that due to huge profits generated from mining activities, **local Mafias are getting involved in** mining related activities such as transportation and trade of iron ore etc. Once Mafias are controlling mining operations, they indulge in all criminal activities which not only increases the crimes but it also results into social disorder.

(xv) Considering huge profits which is earned in mining activities by exporting iron ore, not only it increases illegal activities **but because of money power, it influences State Policies**. **In such state of affairs, it would be difficult to break unholy nexus between law keepers and law breakers because the corruption is likely to flourish**.

(xvi) Further, on the assumption that export of iron ore benefits the country is myth, because thereby the

country can import steel products from China, is an argument by overlooking the fact that industries in the country, if encouraged, can produce steel and steel products easily.

(xvii) **Finally, money earned by illegal activities is large enough to corrupt law enforcing agencies.** Therefore, till the procedure for grant of lease, renewal of lease/licence, establishment of check post and sufficient weigh bridges with adequate staff and frequent visits to check the mines by the concerned officers, is adopted as suggested above, it would be impossible to control illegal mining.

In these set of circumstances, **the State should not bend its policies and permit export so as to drain out national wealth and permit activities which adversely affects forest area, environment and encourages exploitation of labourers, even of minors by various methods**. Such illegalities would continue because : there is inadequate staff : no desire to follow the rules and regulations by the lessees : no will to implement the rules and regulations by the concerned offices and finally, power to take deterrent action is not with one body.

Hence, for the time being, till procedure as stated above is streamlined and illegal activities are

controlled, export of iron ore and manganese may be banned.

This can be reviewed, relaxed and/or liberalized, once effective enforcement agency is in place to see that no illegal mining of these items takes place and also after reasonable estimate of reserves is available and demand of industries for production of steel and steel products in this country, is assessed.

(IX)
FINAL CONCLUSIONS

Undoubtedly, minerals constitute a nation's wealth. It is required to be used with utmost care and caution so that succeeding generations can also utilize the same for development. Section 18 of the Mines and Minerals (Development & Regulation) Act, 1957 casts duty on the Central Government to take necessary effective steps for conservation (preservation and development) of minerals in the India. If we want to preserve minerals for the future, we have to prohibit its unjustified and illegal exploitation for personal gains.

Few reasons why illegal mining continued unabatedly for the years together are as under:

(i) Misuse of Rule 24A(6) of the Mineral Concession Rules, 1960.

(ii) Non-enforcement of Section 24(1) of the Mines & Minerals (Development & Regulation) Act, 1957, which empowers Central Government and State Government Officers to enter and inspect any mine and to survey and take measurements in any such mine, may be because of shortage of staff;

(iii) There are no proper check posts and computerized weigh bridges at the exit points which can prevent

onward march of illegally mined minerals. This also results into nonpayment of proper royalty.

(iv) In some areas, Mafias have taken control of mining operations.

(v) High export prices resulting in unimaginable profits, has tempted number of persons to indulge in such illegal mining activity.

A —— For controlling the illegal mining for the years together, The Standing Committee has suggested that there should be proper checks. Its following observations need to be borne in mind.

(a) The Committee have serious apprehensions that the malaise of the illegal mining will continue to raise its ugly head and the very purpose of streamlining the procedure for grant of mining leases **would be defeated if the cases of grant of mining lease are not disposed of quickly.**

The Committee desires the Ministry / IBM to seriously look at the problem and to ensure that the cases of grant of mining leases are disposed of as early as possible. The Committee would like to be apprised in this regard."

The Standing Committee (Parliamentary) on Coal and Steel (2006–07), has observed as under:

(b) The Committee need not emphasize that timely disposal of mining lease application is in the overall interest of mineral exploration and any **delay in this regard could be interpreted as encouragement to the menace of illegal mining.**

(c) The Committee, therefore, reiterates that the Ministry should take urgent steps to streamline the procedures as to minimize the delay in the grant of mining lease.

B —— Hence, remedial suggestions, which are discussed above, may be treated as an urgent need of the day. The same are, in short, as under:

(I) For streamlining the procedure for renewal of mining lease, Rule 24A (1) and (6) of the Mineral Concessions Rules, 1960, are required to be amended as under:-

Amendment of Rule 24A(1)

(a) An application for the renewal of a mining lease shall be made to the State Government in Form J. at least twelve months before the date on which the lease is due to expire, through such officer or authority as the State Government may specify in this behalf.

(b) In case of forest land, simultaneously with the application for the renewal of a mining lease

under Rule 24(A) (1) (a) appropriate application should be filed before the concerned Forest Officer for approval.

(c) Further, if required, simultaneously with the application for renewal of mining lease under Rule 24(A) (1) (a) appropriate application should be filed to State Pollution Control Board for its clearance.

Amendment of Rule 24A(6)

"If an application for renewal of a mining lease made within the time referred to in Sub-Rule (1) is not disposed of by the State Government before the date of expiry of the lease, the period of that lease shall be deemed to have been extended **by a further period of one year or till the State Government passes the order thereon, whichever is earlier."**

(II) For controlling illegal mining:

(i) beyond lease area or

(ii) mining without lease or licence.

It is necessary to amend the provisions of Section 24(1) of the Mines & Minerals (Development & Regulation) Act, 1957 and Rule 26 and 27 of Mineral Concession Rules, 1960 by adding the provisions as under:

Amendment of Section 24(1)

(a) … … … … …

(aa) verify whether the boundary pillars are properly structured and are easily visible; and reports thereof should be kept on record.

Amendment of Rule 26

(1) to (3) … … … … …

(4) Notwithstanding the provisions of Sub-Rule (1), where it appears that the applicant is indulging in illegal mining or encroachment upon the non-lease area or has extended or changed, in any manner, the boundaries or boundary marks of lease area, the application for renewal shall be liable to be rejected.

Amendment of Rule 27

(1) to (4) … … … … …

(4A) If the lessee / licensee is found to have encroached upon the non-lease area, in any manner, including shifting of boundaries or boundary marks, and / or if the boundary pillars are not maintained, the lease / license shall be liable to be determined after giving 30 days' show cause notice.

Further, Amendment is required in Circular issued by Government of India, Ministry of Mines, Indian Bureau of Mines, Circular No. 2 of 2010 dated 06.04.2010 by adding clause 9 & 10 as under:

(9) The distance between two pillars should not be more than 20 mtrs. and that the pillars should be of concrete.

(10) It should be mandatory for the concerned officer/s to visit the mine/s at least once a month, verify whether the boundary pillars are properly affixed and are easily visible, and the report/s thereof should be kept on record.

AND

If the report is incorrect, the explanation of the concerned officer who visited last should be sought for and if not found satisfactory, departmental action should be taken.

(III) CHECK POST / COMPUTERISED WEIGH BRIDGE AND MAINTENANCE OF ROAD / TOLL TAX AND INADEQUATE STAFF:

It is desirable that all the States may frame identical rules for establishment of the weigh-bridges by exercising powers under section 23C (2) (b) of the Mines and Mineral (Development & Regulation) Act, 1957. The Commission has made suggestions regarding the establishment of weigh bridges as mentioned in its report.

The Commission has also made suggestions with regard to the establishment of check post with adequate staff as discussed earlier in its report.

If controlling machinery is weak and understaff, illegal mining activities would continue unabated.

If Staff is adequate, it would control illegal mining to a large extent and the State can also recover proper Royalty payable.

With regard to the maintenance of road, it is suggested that when there are cluster of mines situated in one locality, then it is advisable to have roads maintained by the lease / licence holders upto a certain limited area. If the roads are not maintained by the lease holders, then appropriate toll tax should be recovered from the lease / licence holders for proper maintenance of roads.

C — DOMESTIC CONSUMPTION

(i) The steel industries in this country will require more and more iron ore for manufacturing steel and steel products.

Number of industrialists like JSW Steel Ltd. (Karnataka), Tata Steel Ltd. (Jharkhand), Ispat Industries Ltd. (Maharashtra), Essar Steel Ltd. (Gujarat), Jindal Steel & Power Ltd. (Chhattisgrah), Lloyds Steel Industries Ltd. (Maharashtra) and

Jindal Stainless Steel etc. are engaged in this field today and they can develop technique for using iron ore for manufacturing steel and steel products.

MOU is also executed by other industrialists with the State of Karnataka as stated above.

(ii) On going through the Article by Mr. M.S. Jairam, Director, Geological Survey of India and the figures supplied by I.B.M., it is apparent that:

(a) the life indices of the high grade lumpy ore (hematite) as on 1-4-2010 will be 10 years and requires immediate attention; and

(b) if there is proper streamlined exploration of iron ore **resources** as suggested by N. R. Khan and domestic demand remains static at **200000** metric tonnes per year, at the most, iron ore reserves would be exhausted within 57 years. It is his suggestion that India must have clear strategy for next 20-25 years for augmenting the resources with proper orientation of exploration in geologically potential domains keeping in view the exploration of the existing established resources.

Aforesaid suggestion would require systematic exploration and excavation of iron ore through scientific method of mining, beneficiation and economic utilization. All this would take a long time.

Further, future demand of Iron Ore, in this country, is not taken into consideration.

D — Hence, for Preservation of Iron Ore, Export is required to be banned.

It appears from the reports of :

(i) Parliamentary Standing Committee on Coal and Steel;

(a) **Though the Indian Bureau of Mines has been mandated with the promotion and conservation of mineral resources of the country, yet the rampant illegal mining has been reported from various States. The menace of illegal mining has been raising its ugly head with impunity.**

(b) **However, amendments in MMDR Act had failed to deter the illegal mining which continues to be unabated.**

(c) **The conservation as well as systematic and scientific harnessing of mineral resources is the bedrock of economic development of a nation. However, unscientific and unlawful mining has been thriving endlessly causing not only immense loss to the national exchequer but destruction of national environment.**

(ii) Central Empowered Committee appointed by the Apex Court for verification of illegal Mining; the reports pertaining to illegal mining in States of Orissa, Andhra Pradesh and Karnataka are exhausted highlighting the fact that illegal mining is due to export.

(iii) interim reports of Justice Hegde, Lokayukta, Karnataka for illegal mining in the State of Karnataka are exhaustive also highlighting the fact that illegal mining is due to unimaginable export value of iron ore.

(iv) views of State of Karnataka, State of Maharashtra and State of Orissa (as stated above),

that we have failed to take appropriate steps/actions **for conservation and systematic and scientific harnessing of iron ore** and manganese which is and would be bedrock of development of a nation and that export of iron ore to China is the main cause for illegal mining and its trade.

Further, the mineral which is a national wealth which takes billions of years for its formation is being drained out of the country by way of export. This may be because of **(i) high export prices and (ii) the existence of unholy nexus between the mineral mafia's and the law enforcement agencies.**

Iron ore is the back-bone of modern civilisation. This mineral wealth is required to be preserved. If it is not preserved, future generations would be required to import it for manufacturing machines, automobiles, trains, ships etc.

It is true that iron ore fines is primarily exported and lumps ore is consumed domestically. **Blanket ban on import may cause drop in prices and this would immediately reduce illegal mining.** This would lead to transfer of surplus of iron ore from mine owners to the consumer industries. There may be some initial problem. But finally this may result in development of technology to use fines in few years by industrialists of this country.

If we want to conserve for the future, we must prohibit in the present.

Hence, for preventing illegal mining and for preserving iron ore, for the time being, export of iron ore is required to be banned. The reasons are:

(i) Undisputedly minerals are a national asset which requires to be properly safeguarded for providing sustained benefits to the entire community for succeeding generations. In any case at least for 3 – 4 generations, we are duty bound to develop and conserve the natural resources, namely, iron ore in the interest of nation. For this purpose, there should be proper mine management plan.

(ii) For this, it would be worthwhile to refer to the observations made by the Hon'ble Supreme Court in the case of M.C. Mehta Vs. Union of India, (2004) 12 SCC 118), which reads as under :

"**Principle 15 of Rio Conference of 1992 relating to the applicability of precautionary principle, which stipulates that where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation, is also required to be kept in view. In such matters, many a times, the option to be adopted is not very easy or in a straight jacket. If an activity is allowed to go ahead, there may be irreparable damage to the environment and if it is stopped, there may be irreparable damage to economic interest. In case of doubt, however, protection of environment would have precedence over the economic interest. Precautionary principle requires anticipatory action to be taken to prevent harm. The harm can be prevented even on a reasonable suspicion. It is not always necessary that there should be direct evidence of harm to the environment.**"

Applying the aforesaid observations, it can be stated that when there are threats of serious irreversible

damage, lack of full scientific certainty shall not be used for postponing effective measures to prevent damage. Precautionary principle requires anticipatory action to prevent further harm and depletion of iron ore reserves.

(iii) Undoubtedly, the menace of illegal mining has been raising its ugly head with impunity and at present, it remains uncontrolled. As observed by the Standing Committee unscientific and unlawful mining has been thriving endlessly **causing not only immense loss to the national exchequer but also destruction of national environment.**

(iv) Considering the present day scenario and staff available with this IBM and State Governments, **it would be difficult to control illegal mining of high grade Iron Ore and its exports. Because the export of Iron Ore is in billions of Rupees, it would be easy to the traders including lease-holders, transporters and other persons to bypass Rules and Regulations and continue in illegal mining by adopting corrupt practices. It would be absolutely difficult to control corruption in the present-day scenario**.

(v)(a) One view is, we are having sufficient reserves of Iron Ore which can meet the demand of the industries in India as well as of the export. However, resources

fully explored as they stand are likely to last at the most 57 years as per the report of Mr. Jairam quoted hereinabove. This also is dependent upon systematic planned exploration.

(b) He has also observed that "**the life indices of the high grade lumpy ore (hematite) as on 1.4.2010 will be 10 years and requires immediate attention.**"

(c) In any case, the estimate depends upon resources and probable availability of iron ore from various fields. To achieve the iron ore demand of the future, strategy should be changed for making available adequate iron ore resources by way of systematic exploration and India must have clear strategy for next 20 to 25 years for augmenting the resources. **It is true that these are high hopes and may take years together for having proper strategy for exploration of iron ore resources.**

(vi) It has also been contended that if there is further exploration then there is likelihood of getting more reserves of Iron Ore and that is the experience of other countries. However, Exploration of resources is one thing and Exhaustion of reserves is another thing. Exploration of resources is to march in a different direction. It has to be a long drawn project which can be hardly connected with the problem of

Exhaustion of reserves. Menace of illegal mining has direct connection with Exhaustion of reserves, **Thus, Exhaustion of reserves of Iron Ore and Manganese Ore is a matter of great concern at present**.

It has to be remembered that domestic demand for Iron Ore for production of steel is bound to increase in the present day scenario. More and more industrialists are likely to come forward for production of steel.

For export, Mr. Jairam has pointed out two diversion views (1) advocating export and (2) other user groups voicing their concern on the non-availability of desire quality and quantity of iron ore on sustain basis **until further systematic exploration is undertaken to augment resources under proved reserve base**.

Rapid depletion, export and inadequate Proved reserve of iron ore in the country would call for modern systematic exploration practices in both brownfield and greenfield tracts to build up additional reserves and resources. Prioritization on a national level is the need of the day.

(vii) In the aforesaid set of circumstances, particularly, considering the present days' scenario in the

country, it is apparent that **export of 92% of iron ore fines to China to fulfill its requirements, led to increase in illegal mining, trading and transportation.**

(a) **This has increased menace of Mafia controlling mining activities including trading, transportation and export of iron ore because it has given unimaginable huge profits with less cost and efforts. For this the efforts are put only by exploited labourers working in the field.**

(b) Even though common people who were not at all concerned with mining activities are in the business in the name of trading, processing and transportation of iron ore which has resulted into increase in illegal mining.

(c) Not only this, some persons are connected with political parties and many of them who are in key positions are involved in illegal mining activities in the name of trading, transportation etc.

(viii) What emerges from the views expressed by the States of Karnataka, Maharashtra and Orissa to the questionnaire, and the Articles referred to above, it is apparent that **the export quantity of iron ore attracts huge profit margins. Even common people are involved into this business in the name of trading, processing and transportation**

of iron ore resulting into increase in illegal mining activities.

(ix) Bulk imports by China to fulfill its requirements led to increase in illegal mining and transport. The price rise of manganese was almost 15-20 times. The low grade manganese which fetched a price of Rs.200/- to Rs.300/- per tonne was sold for about Rs.4000/- to Rs.5000/-. **This is a primary cause for illegal mining.**

(x) It is the fines which are primarily exported while lumpy ore is consumed domestically and blanket ban on exports may cause a drop in prices. **Thus, it would result into lower incentive for illegal mining.**

(xi) The banning of export of **iron ore will help the growth of individual steel plants** which would provide lot of employment to the local people and will control illegal mining activities to a greater extent.

(xii) This would also result into development of technology to use fines in a long run.

(xiii) It is pointed out that at present staff is inadequate to control illegal mining. Unless adequate staff is appointed by the State Governments in the Mines and Mineral Department and also adequate supervisory staff is appointed with Indian Bureau of

Mines (IBM), it would be absolutely difficult to control illegal mining. **If the controlling machinery is weak and is understaffed, the illegal mining activities would continue unabated**.

(xiv) As per News-paper Article, **criminal gangs are looting the mineral resources at will in the State of Orissa**. Similarly, in the States of Karnataka and Maharashtra the Mafias operate in a well-organized manner. It is also apparent that due to huge profits generated from mining activities, **local Mafias are getting involved in** mining related activities such as transportation and trade of iron ore etc. Once Mafias are controlling mining operations, they indulge in all criminal activities which not only increases the crimes but it also results into social disorder.

(xv) Considering huge profits which is earned in mining activities by exporting iron ore, not only it increases illegal activities **but because of money power, it influences State Policies**. **In such state of affairs, it would be difficult to break unholy nexus between law keepers and law breakers because the corruption is likely to flourish**.

(xvi) Further, on the assumption that export of iron ore benefits the country, because thereby the country

can import steel products from China, is a myth and an argument by overlooking the fact that industries in the country, if encouraged, can produce steel and steel products easily.

(xvii) **Finally, money earned by illegal activities is large enough to corrupt law enforcing agencies.** Therefore, till the procedure for grant of lease, renewal of lease/licence, establishment of check post and sufficient weigh bridges with adequate staff and frequent visits to check the mines by the concerned officers, is adopted as suggested above, it would be impossible to control illegal mining.

In these set of circumstances, **the State should not bend its policies and permit export so as to drain out national wealth and permit activities which adversely affects forest area, environment and encourages exploitation of labourers, even of minors by various methods**. **Such illegalities would continue because : there is inadequate staff : no desire to follow the rules and regulations by the lessees : no will to implement the rules and regulations by the concerned offices and finally, power to take deterrent action is not with one body.**

In the result, for the time being, till procedure as stated above is streamlined and illegal activities

are controlled, export of iron ore and manganese may be banned.

This can be reviewed, relaxed and/or liberalized, once effective enforcement agency is in place to see that no illegal mining of these items takes place and also after reasonable estimate of reserves available and demand of industries for production of steel and steel products in this country, is assessed.

Date : 14.7.2011

(M. B. SHAH)
(Former Judge, Supreme Court of India)

Chairman
Commission of Enquiry
for
Illegal Mining of Iron Ore & Manganese