



**CHANGING FACE  
of  
SARANDA**

**Saryu Roy**

*Published by*  
**Nature Foundation**



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First Edition :  
May - 2026

## **CHANGING FACE OF SARANDA**

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Publisher :  
Nature Foundation  
Sidrol, Namkum, Ranchi

Price : 100/-

Printers :  
Jharkhand Printers Private Limited  
6A, Gurunanak Nagar  
Sakchi, Jamshedpur-831001

**Dedicated to  
The activists and  
Sympathisers of  
Save Saranda Campaign  
movement.**

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## PREFACE

This book "Changing Face of Saranda" is based on the ground informations collected and compiled by a team of experts and activists under the aegis of Yugantar Bharati, a pioneering Non Govt institution of Jharkhand in the field of Environment and Ecology. Wide ranging opinions of environmentalists and Saranda villagers emerged during a few seminars and workshops organised by Yugantar Bharati in this context have enriched the content of the book. Title of the book is self speaking.

No doubt, face of Saranda is changing fast impinging adversely on the special features for which Saranda is known worldwide. It was smelt rather identified far back by the enlightened persons concerned with preservation and conservation of the natural resources and possible remedy too was suggested but the system of Governance failed to arise and act timely in accordance with integrated and comprehensive approach resulting into the problem getting worst confounded day by day. Situation at present has become so complicated that right arm of the system often refuse to act on what the left arm suggests.

In between few appropriate steps were initiated to minimise the adverse impacts of economic and commercial activities over the environment and ecology of Saranda but remained fruitless. On June 16, 2003 the Director General of Forests & Special Secretary, Ministry of Environment & Forests suggested the Chief Secretary of Jharkhand to initiate appropriate steps in such manners and plan to phase out such commercial activities from the dense reserved forests areas in a time bound manner which are endangering longevity and environment of forests and natural resources . Yet the suggestion is unimplemented owing primarily to the competing and conflicting interests of the the related Govt departments.

I myself filed a public interest litigation petition before the Jharkhand High Court at Ranchi in 2013 for sustainable mining and other economic activities inside the area of Saranda Forest Division and adjoining divisions. The different arms of the Governmental system do not seem keen to respond in unison in accordance with the directions issued by the Hon'ble High Court in this regard from time to time. Meanwhile the Union Govt. has come with a number of amendments in the concerned Act and relevant Rules in view of the Apex Court judgements in this connection. Yet the moot question,

whether the Natural paradise like Saranda be conserved, preserved and augmented in this way, remains unanswered .

The Yugantar Bharati took initiative to prevail upon the Jharkhand Government in this matter and to draw public attention towards it. It initiated "Save Saranda Campaign" and formed a body of experts and Saranda dweller activists interested in saving Saranda from menace of market forces in mining sector. This body raised voice of the people for conservation and preservation of widespread natural resources consisting of rich flora-fauna and varied wildlife capital, precious land and water resources across the Saranda region. It termed the Sal trees standing over the surface of Saranda as green steel and propounded its importance.

A series of seminars, workshops, protest programmes were organised and memorandums were handed over to the state and central governments to draw their attention towards plight of Saranda forest dwellers and unmindful activities of mining related market forces bent upon to destroy the very basis of uniqueness of nature made antiquated glory of the region. "In course of Save Saranda Campaign plethora of rudimentary informations were collected by Yugantar Bharati team activists. These informations are neither exclusive nor inclusive but demonstrates the efforts of a group of socio-environmental activists with noble objectives of highlighting the dangers looming large over the elemental glory of Saranda forests.

This book contains collection of such informations and is a testimony of the efforts of Save Saranda Campaign volunteers. Its publication after more than a decade of its compilation vividly reminds the rat race at the time of beginning of this century just after a few years of formation of the newly carved state of Jharkhand on the political map of India. This was the time around 2003-04 when Government of India changed its mineral marketing policy and thereafter demand of iron ore soared suddenly and resourceful bourgeois and capital managers of all hues made a bee line to get iron ore mining leases in Saranda area. The Govt. of Jharkhand was totally unprepared to face such rush of greedy lot at policy and programme level, yet the vested interests hovering in and around the corridors of power influencing state govt. machinery were more than enthusiastic to oblige whosoever comes before them for iron ore mining leases. A scenario of chaos backed by unhealthy competition amongst unscrupulous market forces prevailed upon the power leading to an imminent scam which maligned the face of Jharkhand in India and abroad.

This book is an epitomising testimony to the praiseworthy efforts of the activities and experts whose attempts bore fruits when the Supreme Court of India after hearing multisides arguments during intese debate and thorough discussions on different dates finally directed the Jharkhand govt. to declare a significant portion of Saranda forest area as wildlife sanctuary. The book no doubt will prove a meaningful milestone in this context.

I thank the enterprising initiative of experts and activists associated with this venture and laud their consistants efforts of making the people and system aware about Changing Face of Saranda tending towards success. The notable persons associated with different commissions and committees as well as the enlightened persons who drew attention of judiciary and legislature too deserve respectful appreciations for enriching the content of this book through their commendable contributions. I myself feel happy to be associated with this noble cause.

Shri Rajesh kumar sinha, my personal secretary in jharkhand vidhan sabha owes special thanks as he put enough labour to compile the informations contained in different chapters of the book and get it typed meticulously. Similarly Shree Bala Kumar singh and Md. Imteyaz of Jharkhand Printers who brought the scattered chapters in the form of a book and made up its cover pages. The management of the Jharkhand Printers Pvt. Ltd., Jamshedpur who successfully took challenge to print this book within twenty four hours time. I also thank Yugantar Bharati for providing me access to the facts and figures compiled by its team of experts more than a decade ago.

“I express my gratitude to prof. D S Shriwastava, an eminent environmentalist residing at Medininagar, Palamu and to Dr. R K Singh, a noted wildlife expert of Delhi for their valuable guidance and suggestions in course of writing this book. I also thank to large number of environmental activists and well wishers who provided primary inputs with regard to the adverse impacts looming large over the pristine Saranda forest from time to time.

**- Saryu Roy**

# **PART - I**

## INTRODUCTION

Saranda is a World famous Sal (*Shorea robusta*) forest in the West Singhbhum district in the state of Jharkhand in India. Similar sal forest is also found in a portion of neighbouring Orissa state also. Saranda has a well defined geographical boundry To its North, lies the Kolhan forest division of Jharkhand and river Karo. To the South of Saranda lies the dense forest of Bonai in the Keonjhar district of Orissa. The South Koel river valley demarcates its northern limit and the Kolkata-Mumbai main railway line passes close through its northern end. The Simdega district of Jharkhand is situated in its North west. The Saranda forest division is thus a well-defined geographical administrative unit.

The word 'Saranda' in the local 'Ho' tribe dialect is known as the land of seven hundred hills and looks like the billowing waves of sea where one set of wave comes over another into stretch of extended vista of blue. Likewise the green hills of Saranda appear to run into one another seamlessly spreading out infinitely into a mesmerising and soothing green forest covered hills as well as sparkling and swirling rivers. It is in fact a unique confluence of forestry and natural beauty. These hills are situated at a height of 200 meters to 927 meters from the sea level. The minimum height is 200 meters of the Samta valley while the maximum height is of Sasangdaburu at 930 meters. The total area of Saranda is around 2,11,718 acres (85,712 hectares).

The Saranda is known as the best pristine Sal Forest in Asia. The total area of the Saranda forest as per the Third Working Plan (1936-37 to 1955-56\_ prepared by H.F. Mooney, the then Dy. Conservator of forests, Bihar & Odisha. It spans approximately 857.12 sq. km (85,712 hectares) of which 816.64 sq. kms is reserved forest and the rest 40.48 sq. kms is protected forest and is dominated by Sal trees. It is regarded as the most compact forest division in Jharkhand except for a few revenue villages at Chhotanagra, Kodalbad, Ponga and some settlements acts Ghatkuri, Salai, Ankua etc.

The Saranda area consists of jungle-covered hills striking fairly consistently north east and south-west, through perhaps the parallelism of the ranges is less evident here than in the Porahat. Most of the higher ridges exceed two thousand feet, gradually rising towards the south where they culminate in the Sasangda Buru plateau

927 meters above mean sea level. It lies between latitude 22°0'00" and 22°26'00" to North and longitude 85°00'00" and 85°26'00" east.

The valleys are on the whole open, frequently steep, and usually moderate. In the most of the larger valleys small villages are located; but they are fairly widely interspersed except in the large enclave comprising the Chhota Nagra group and again in the valley of the South Koel towards Manoharpur and Jeraikela at the outer fringe of Saranda. The country as whole is of a fine rugged nature.

The soils of the area are roughly classified under the rocks from which they are derived. The soft carbonaceous phyllite weathers to form the most infertile soil. However, some of the forests occur along the areas where there is a good depth of well drained soil derived from the ferruginous boulders in the sub-soil. The soil is generally a ferruginous clay or loamy clay.

The quartzite of the Tholkobad and Tirilposi yield a light sandy loam, which is usually well watered by small springs in the upper valleys and is generally well clothed with moderate to good quality Sal.

The basic phyllites and schists weather readily and generally give rise to very deep fertile soils in the valleys, which usually support mixed forest of a moist type with a varying proportion of sal. The valley is watered by abundance of perennial first order streams. These soils vary from loams to clay loams.

The latest census of year 2011 suggest that the population in the Saranda forest division is about 51,688 as compared to 10,365 (omitting the Manoharpur tenure of 6 Lakiraj villages) according to 1931 census. The inhabitants are mostly ottio's tribe belonging to Kolarian group of tribes.

Although the extraction of iron ore through manual mining method started in Saranda in roughly 1900 onward but between 1980 and 2000, environmental safeguards weakened. Mine tailings, dumped into the Koina River, forced elephants to abandon their habitats. By 1988, herds had begun migrating to Madhya Pradesh - a first since Independence. Madhya Pradesh even captured ten elephants in 1993, but migrations persisted into Madhya Pradesh and Chhattisgarh.

Yugantar Bharati, a registered non-governmental organization working in Jharkhand started in depth study on the pristine forests of

Saranda in the year 2010. It conducted a survey to assess the loss of biodiversity and natural resource potential due to mining activities in Saranda forests and neighboring Noamundi forest range of Chaibase forest division the study revealed that the pristine glory of Saranda is at stake due to intensive mining backed by mining lobby in the administration. Even Saranda's working plan had expired in 1995-96 and is not renewed till now. It was observed that the greed to extract precious underground natural resources in a non-ecologically unsound manner is leading towards acute as well as chronic pollution of land, water, and soil, as well as fast disappearance of biodiversity including many charismatic and species of wild animals such as Guar etc.

This decline had been foreseen by several conscientious individuals and experts, who also suggested timely remedial measures. Unfortunately, the system of governance failed to act timely with the integrated, holistic approach required allowing the situation to deteriorate further.

**- Saryu Roy**

## CONTINUITY AND CHANGE

A world heritage like Saranda forest presents an example of anthropogenic influence on natural ecosystems and the helplessness of the ecosystem to cope with the tremendous pace and speed of technological advancement made by man. All ecosystems have resilience power, but this power has its limitations. The team of Yugantar Bharati has tried to assess the continuity and change in Saranda forests.

### 2.1. The People

Recent census figure shows manifold increase in the demographic figure of Saranda region. The number of villages has also increased and more than half a dozen semi-urbanized clusters have come into existence mainly due to rapid increase in mining and related economic activities. Lists of villages and its population according to 1931 and recent Census (2011) are given in Table 2.1. and 2.2. respectively. The population growth is mostly in valley areas where villages are situated. The growth is also seen in the areas of mining and economic activities, that have developed in Kiriburu, Gua, Chhotanagra, Badajamda, Manoharpur and other similar areas.

#### Population of villages in Saranda Division according to the Census of 1931 (Omitting the Manharpur tenure of 6 lakiraj villages)

Sl. No.	Name of Villages	Population
1	Bahada	85
2	Tentari ghat	75
3	Baihatu	185
4	Jojogutu	233
5	Rjabera	74
6	Chota Nagra Khas	69
7	Chota Barkeda buru	137
8	Chota Baruiya	9
9	Chota Oharemagutu	111
10	Chota Kansgarh	52
11	Jamkundia	186
12	Oholbil	203
13	Kasiya pencha	121
14	Gangda	250
15	Roam	57
16	Ghatkuri	223

17	Kumbia	88
18	Churgi	50
19	Mamar	51
20	Chota Jamkundia	29
21	Jamira	93
22	Henua	39
23	Salai	148
24	Oodari	132
25	Oulia	235
26	Lambera	122
27	Ankua	114
28	Chiria	27
29	Biwan	66
30	Loh	97
31	Timra	73
32	Surguia	39
33	Soda	93
34	Parom tim	95
35	Hendediri	77
<b>Sl. No.</b>	<b>Name of Villages</b>	<b>Population</b>
36	Sonapi	74
37	Hatnaburu	135
38	Usuria	60
39	Oiku Ponga	83
40	Marang Ponga	192
41	Gingdung	207
42	Kolbonga	127
43	Rabangda	160
44	Lailor	270
45	Domlai	466
46	* Bitkilsoiya	100
47	*Oigha	255
48	*Tirilposi	148
49	*Nawagaon	225
50	Baliba	142
51	Kulaiburu	47
52	Holonguli	89
53	Nuadih	216

54	Tormunda	129
55	Reda	183
56	Raibera	84
57	Sagjori	634
58	Samta	307
59	Phulbari	214
60	Panchpaiya	326
61	Makranda	612
62	Gua	92
63	Nuia	138
64	Borai Buru	115
65	Tatiba	180
66	*Kumdi	70
67	*Karampada	72
68	*Nuagaon	128
69	*Bhangaon	184
70	*Tholkobad	97
71	Kodalibad	66
<b>Total</b>		<b>10,365</b>

**Table 2.2. List of Village and Population - 2011 Census**

The total population of Saranda is given in the Saranda Development Plan prepared by the Jharkhand Govt. according to the figures of 2011 census. It is obvious that saranda population was 10,365 as per 1931 census which rose to 51,688. A few new villages too has come up in this period.

Sl No.	Block	Panchayat	Village	Total Population	Male	Female
1	Manoharpur	Lailor	कोलबोंगा	421	207	214
2	Manoharpur		लाईलोर	1290	610	680
3	Manoharpur		पंचपहिया	876	461	415
4	Manoharpur		उमलाई	972	483	489
5	Manoharpur		रायकापाट	382	186	196
6	Manoharpur		तोरमुण्डा	235	110	125
7	Manoharpur		गिन्दुंग	481	230	251
8	Manoharpur		सुनसुना	88	43	45
9	Manoharpur		राबंगदा	645	329	316

10	Manoharपुर	Makranda	मकरण्डा	2071	1088	983
11	Manoharपुर		सागजोड़ी	2082	1046	1036
12	Manoharपुर		सामठा	1290	627	663
13	Manoharपुर		फुलवारी	502	248	254
14	Manoharपुर	Chidiya	अंकुवा	766	376	390
15	Manoharपुर		चिडिया	4178	2101	2077
16	Manoharपुर		लोडो	455	239	216
17	Manoharपुर		बिनुवा	513	278	235
18	Manoharपुर	Gangda	कम्बिया	338	167	171
19	Manoharपुर		चुरगी	192	90	102
20	Manoharपुर		दुईया	630	324	306
21	Manoharपुर		ममार	155	73	82
22	Manoharपुर	Chotanagra	सेलाई	366	174	192
23	Manoharपुर		हीनुवा	167	79	88
24	Manoharपुर		रोवाम	242	126	116
25	Manoharपुर		घाटकुडी	728	365	363
26	Manoharपुर		गंगदा	947	522	425
27	Manoharपुर		काचियापेचा	475	239	236
28	Manoharपुर		टिमरा	749	398	351
29	Manoharपुर		जोजोगुटु	543	270	273
30	Manoharपुर	राजाबेड़ा	245	125	120	
31	Manoharपुर	दुबिल	738	374	364	
32	Manoharपुर	रडुवा	157	80	77	
33	Manoharपुर	जामकुण्डिया	644	339	305	
34	Manoharपुर	सोनापी	546	279	267	
35	Manoharपुर	बहंदा	431	223	208	
36	Manoharपुर	तेतलीघाट	469	238	231	
37	Manoharपुर	बाईहातु	604	300	304	

38	Manoharpur		छोटानागरा	1364	747	617
39	Manoharpur	Digha	मारंगपोगा	552	265	287
40	Manoharpur		दीकुपोंगा	156	74	82
41	Manoharpur		हतनाबुरु	384	183	201
42	Manoharpur		होलहोली	372	187	185
43	Manoharpur		उसरुईया	234	131	103
44	Manoharpur		दीघा	784	384	400
45	Manoharpur		नवागांव-1	416	214	202
46	Manoharpur		बिटिकिलसोया	440	233	207
47	Manoharpur		धोलकोबाद	320	178	142
48	Manoharpur		Meghahatuburu North	बालिबा	426	204
49	Manoharpur	तिरिलपोसी		415	221	194
50	Manoharpur	कोलायबुरु		215	109	106
51	Manoharpur	कुदलीवाद		93	51	42
52	Manoharpur	कुदलीबा		266	126	140
53	Manoharpur	कुमडी		428	222	206
54	Noamundi	करमपदा		1406	823	583
55	Noamundi	नोवागांव	297	149	148	
56	Noamundi	भनगांव	814	407	407	
57	Noamundi		बराईबुरु	945	470	475
58	Noamundi		गुआ (सीटी)	12554	6398	6156
59	Noamundi		नुईया	1209	1128	81
60	Noamundi		तातिबा	985	503	482
	Total			<b>51688</b>	<b>26854</b>	<b>24834</b>

**Table 2.1. List of Village and Population - 1931 Census**

The Yugantar Bharati field team collected the details as far as possible with regard to the people of different castes residing in the area. The information collected so far is as below -

## List of castes of people inhabiting Saranda area

1.	Ho	2.	Bhuiya	3.	Goap
4.	Champiya	5.	Christian	6.	Nayak
7.	Pan	8.	Bania	9.	Mahto
10.	Gaur	11.	Munda	12.	Kumhar
13.	Pradhan	14.	Mahil	15.	Tati
16.	Bulmuchu	17.	Purti	18.	Kamar
19.	Chairwa	20.	Lohar	21.	Oraon
22.	Ghasi	23.	Bobonga	24.	Hemrom
25.	Mundari	26.	Mochi	27.	Behra
28.	Santhal	29.	Tamaria	30.	Patra
31.	Oriya	32.	Kolaya	33.	Baraik
34.	Birhor	35.	Nagpuri	36.	Brahmin
37.	Dhobi	38.	Kurmi	39.	Rajput

### 2.2. HEALTH ISSUES

The climate of Saranda has a very evil reputation. The entire area is malaria endemic throughout the year, except possibly during the latter part of the hot weather. The survey undertaken by Yugantar Bharati revealed that hyper-endemic malarial conditions were prevalent in the entire area resulting in a partial immunization of the local population. A very high percentage of the inhabitants are, therefore, carriers. Black water fever also occurs in the division, the incidence being apparently greatest in the vicinity of the iron mines. Tuberculosis is very prevalent amongst the Ho tribe.

Yugantar Bharati's field worker after studying the reports of hospitals of Public Sector Undertakings (PSUs) and private enterprises found that diseases like malaria, respiratory tract infection, hypertension and heart ailments are prevalent in the region. An in depth study is required to assess the health condition of the people so that proper remedial measures may be taken by the government as well as mining companies in the form of corporate social responsibility (CSR) activities.

### 2.3. A BRIEF SOCIO-ECONOMIC PROFILE

The tribal population till a few decades ago used to sustain entirely on his rather precarious form of cultivation, supplementing his diet by roots and fruits picked up in the jungle. They used to do no more work than was absolutely essential to provide with nourishment (and

what is more important than the rice beer!). A very large proportion of the area under cultivation consists of dry uplands with poor yield. Formerly "purunga: or shifting cultivation was extensively practiced, but with the formation of the reserves its scope has been much restricted. The actual requirement of the population used to be very simple and was normally obtainable from the forest within the village area.

Agriculture is the main source of livelihood for the people here besides various subsidiary occupations such as that of a mining labour, agriculture labour and developmental works labour. About two third of the population have land of their own. Agricultural practices are limited and production is very low. The farmers mostly use organic fertilizers based mainly on cow dung and leaves. The cultivators use the seeds from their own farms. Agriculture production is mostly of rice, traditional pulses, and oil seeds of local varieties. Agriculture is not at all a profitable occupation, hence the farmers have to supplement their income by getting engaged in other subsidiary occupations.

The households are small and sex ratio is unfavourable to women. It is 896 women on a population of per thousand men. The literacy rate is below fifty percent, and the area lacks in primary educational facilities. Almost all the houses in the rural areas are 'Kachcha'(hut like, with no use of cement). Hardly a few 'Pucca' (cemented) houses are seen in semi urban areas barring the mining company areas. Fire wood and kerosene is main source of energy since the villages are devoid of electricity. About 90 % of the population uses firewood as a source of energy for various works.

Apart from agriculture, the other important occupation is goat and poultry rearing. Eighty to ninety percent of the population is dependent on forest for livelihood. Collection of major and minor products from the forests, like 'mahua' (*Madhuca longifolia*), 'sal' (*Shorea robusta*) leaf, 'sal' seeds, 'kendu' (*Diospyros melanoxylon*) leaf, 'kusum' (*Schleichera oleosa*), tamarind, 'tassar' cocoon, grasses for rope making, firewood etc. is extensively done.

#### **2.4. RESERVE AND PROTECTED FORESTS IN SARANDA**

Out of the total area of SARANDA around 2,00,052 acres (80,992.71 hectares) areas is under reserved forests and around 11,656 acres (4,719.03 hectares) areas is marked as protected forests. The details of reserve and protected forests at different compartments of SARANDA are given below:-

**Table 2.4. Reserved Forests in Saranda**

<b>Block</b>	<b>Area* in Acres</b>	<b>Area** in Acres</b>
Ankua	40,091	40,091
Ghatkuri	30,828	30,838
Karampada	30,319	29,088
Kodalibad	11,783	11,635
Tholkobad	26,225	26,326
Tirilposi	30,069	30,555
Samta	31,484	31,529
<b>Total</b>	<b>200,799</b>	<b>200,052</b>

\* According to register of reserved forests

\*\* According to 1934 computation and 1935 survey of forest villages

**Table 2.5. Protected Forests in Saranda**

<b>Name and Number of Blocks</b>	<b>Area* in Acres</b>
Rabangandh (P.F. 11)	2,191.8
Sagjor (P.F. 12)	400.8
Samtha (P.F. 13)	654.5
Makaranda (P.F. 14)	1,096.6
Kodalibad (P.F. 16)	263.3
Usuria (P.F. 17)	103.0
Marangponga (P.F. 18)	446.1
Bhada (P.F. 19)	61.6
Sonapi (P.F. 20)	1,729.6
Chota Nagra (P.F. 21)	257.5
Jojogutu (P.F. 22)	501.3
Dhobil (P.F. 23)	756.4
Kasiapancha (P.F. 26)	1,596.6
Nuia (P.F. 37 A)	373.4
Baraiburu (P.F. 37 B)	889.4
Gua (P.F. 38)	333.95
<b>Total</b>	<b>11,655.85</b>

\* According to Bihar and Orissa Survey 1934

## **2.5. SARANDA'S NATURAL RESOURCES**

### **2.5.1 Iron and Manganese Ore**

There is abundance of iron ore, manganese and other minerals below the sub surface of Saranda. The iron ore found here is mostly of haematite grade. There is an estimated reserve of around 4596.62 MT of iron ores in Jharkhand of which magnetite is hardly about 10.541 MT and the rest is haematite. As far as haematite resources are concerned, Jharkhand is at second place in the country, while in terms of iron ore production, it is at the fifth position with its iron ore production value contribution to the country being 6 percent. The majority of the total iron ore reserve of Saranda, around 62 per cent, is in Manoharpur-Chiria area. Next, the 16 per cent is in Gua-Ghatkuri area, 13 per cent in Kiriburu-Meghahatuburu area and the remaining 9 percent is in Noamundi-Jamda area.

### **2.5.2. Water Wealth of Saranda**

Saranda is mainly divided into two well-defined drainage systems which are further divided by a 2000 feet long watershed. This watershed extends from Bhangaon to North Tholkobad up to West Tirilposi and up to Nawagaon in the South-Western direction. The water of Tholkobad and the southern part of Tirilposi is drained through this southern and relatively small drainage system. The streams of the drainage area of Rangnagara, Padamoi and Nawagaon nullah also converge in it. All these streams untidily merge into Brahmini River. Among these Rangnagara is ever- flowing and full with water round the year.

Saranda region is on the whole well watered. Apart from the Karo and Koina which are the main rivers there are numerous small perennial streams, especially in the southern half of the division in Karampada, Tholkobad and part of Tirilposi blocks. The major perennial streams of Saranda are Lailor, Tentari, Samta, Kalia, Pitidiri, etc. Karo is the longest river, but it helps drain only a small area of Ghatkuri. In fact, Koina is the most important river of this area which takes care of around half the drainage area, that is, around 40,000 hectares. It originates from the foothill of Karampada forest block of Saranda and meets South Koel River near Manoharpur. Karo and Koina are ever-flowing rivers of Saranda.

Saranda region is on the whole well watered. Apart from the Karo and Koina rivers there are numerous small perennial streams, especially in the southern half of the division in Karampada, Tholkobad and part of Tirilposi blocks. A very large number of springs are associated with the quartzite rocks, emerging usually at the foot of

the outcrops. The banded-haematite-quartzite underlying the iron ores in Karampada and Ghatkuri blocks is the source of numerous springs. There is a general tendency for streams to dry up as they pass below 1,200 feet elevation in the north of the division. There has been gradual drying up many streams during the last fifty years causing depletion of water table.

### **2.5.3. The Flora of Saranda**

There is abundance of natural resources in the dense forests of Saranda. The land is covered with different varieties and plenitude of high grade 'Sal' (*Shorea robusta*) trees. A diversity of medicinal plants is also found here. Besides, there are several dozen species of trees, plants, shrubs and 'Sabai' grass. The description of flora of the Saranda is given in the various literatures of the past. However almost all the recent Working Plans of the Saranda forest division are silent about its current status. There is a vast gap between the flora described in the literature like Hen's Flora of Bihar and Orissa and those found on the soil of Saranda at present. A separate study needs to be done to prepare a comparative list of the flora given in the literature its current status. It is beyond doubt that many plants must have been wiped out from Saranda forests.

### **2.5.5. The Fauna of Saranda**

#### **2.5.5.1. Wild Animals**

Saranda is famous for one of the best elephant habitat of eastern India. Apart from Indian Elephants (*Elephas maximus*), Several other wild animals were found in Saranda in past like 'Sambhar' (*Rusa unicolor*), 'Cheetal' (*Axis axis*), Neelgai or blue bull (*Boselephus tragocamelus*), Tiger (*Panthera tigris*), Leopard (*Panthera pardus*), Sloth bear (*Melursus ursinus*) and Indian bison or Gaur (*Bos gaurus*), Chowsingha OR Four horned antelope (*tetraceros quandricornis*) and a large number of different kinds of birds, but their current status is doubtful.

Elephants are fairly abundant in past during the latter part of the rainy season and the early cold weather but now their population is drastically reduced. In past they used roam all over the area as far north as Manoharpur; and then cross into Anandpur and Porahat. Now there is very small number of residing elephants population in the division.

Indian Bison locally known as 'Sail' was commonly seen in Karampada, Ankua and Tholkobad area but now almost locally extinct. After the massive expansion of Megahatuburu mines and

encroachment in Karampada-2 compartment the Indian Bison is completely extinct from this area.

The population of deer species like Sambhar, locally called 'Sarom', Chital, locally called 'Pusta' has also very less due to extensive hunting and degradation of their habitat due to mining.

Barking deer (*Muntiacus muntjak*), locally known as 'Silip' was also abundant in the Saranda but now remained few in degraded forest patch, four horned antelope (*Tetracerus quadricornis*), also known as 'Orep' and Mouse deer or 'Yar' (*Moschiola indica*) is almost extinct.

The presence and distribution of Tiger or 'Kula' (*panther tigris*) and Leopard (*Panthera pardus*), known as 'Huring Kula' is doubtful and need an assessment. Sloth Bear population status also needs to be ascertain.

Other small animals of interest are Wild dog (*Tani*), Otter (*Udom*), Ratel (*Armu*), Central India Squirrel (*ondaing*), Flying Squirrel (*Oral*), which are not commonly seen except the Central India Squirrel, which is numerous and wild dog which are fairly common in past and their current status needs to be assessed.

#### **2.5.5.2. Birds**

There is no reliable inventory of birds in the area other than probably what has been listed in the EIAs and EMPs of some of the lease holders. According to draft Integrated Wildlife Conservation Plan (IWCP) of Singhbhum forests rapid survey, about 60 species were observed in different places. A notable observation was White backed vulture observed in a flock. It also mentions presence of *Griffon vulture*, *King vulture* and *the white scavenger vulture* in Saranda.

Peafowl (*Mara*) and jungle fowl (*Gallus spp.*), locally known as 'Bir sim' which used to be in abundance earlier, have now become scarce. This seems to be mainly due to rapid growth in various activities during last half decade which has altered environmental conditions leading to unfavourable breeding climate.

The Dulaigara and Ranganagara seem to hold more peafowl than other localities while jungle fowl frequent most of the well watered valleys such as that of the Koina after the crops have been cut.

The rare purple wood pigeon (*Columba punicea*), locally known as 'Gara putam' has been rediscovered. It is found in a few high valleys in the vicinity of Tholkobad and should be afforded complete protection.

According to the locals the Imperial pigeon is also seen at a few places in south Saranda region.

#### **2.5.5.3. Reptiles**

The IWCP documents refer about reptiles in the area. The most interesting reference is the mention of crocodiles in Koina river in the 1950s and its disappearance by 1970s. Monitor lizard (*Varanus*) is probably one of the interesting species mentioned in earlier records of which 20 species were recorded during the IWCP rapid survey.

#### **2.5.5.6. Fish**

There had been no concerted effort to document the fishes in the area. According to the locals fishes are found though very few in numbers in Karo and Koina rivers.

#### **2.5.5.7. Butterflies**

Butterfly of above 60 varieties are found in which 2-3 species are said to be unique in this areas. It needs a long time survey in different seasons to get extract information about it.

## THE MINING MENACE

The mining of minerals in the dense forest areas of Saranda started as a result of developmental needs. The allotment of mining leases began in pre independence period to cater the industrial demands of that time. There is a mention of this in the Work Plan prepared in 1937, but there is no estimate of its adverse effects on the forests in this Plan. Possibly the impact on forests was not evident due to mining in limited area and small scale of mining. The first forest mining lease was approved on 215 hectare forest land in Ghatkuri of Saranda area. This lease was awarded to Bonai Iron Company. Later the company was merged with IISCO. Till 1932, mining lease was issued on a total 4,831.71 hectare forest land in Ghatkuri and Ankua areas of Saranda. The details of the Iron ore mining leases allotted during pre-independence period are summarized in tabular form below.

**Table 4.1. List of Mining Leases in Pre-independence Period in Saranda**

Name of Leaser	Nature of Lease	Area Leased Acres.	Situation	Date of Lease	Period of Lease Year
1	2	3	4	5	6
Bonai Iron Company	Iron Ore	249.6 281.6	Ghatkuri 6 and 7	06-12-1909	30
" " "	Iron Ore	800.00	Ankua 10,11,13	07-12-1917	30
" " "	Iron and Manganese	1139.76	Ghatkuri 26,29,31,32	07-03-1925	30
" " "	Iron and Manganese	2035.20	Ankua 11,12,13,18,19 20,31,32,37,38	08-12-1915	30
Indian Iron and Steel Company	Iron and Manganese	520.00	P.F. 37and 38 and Ghatkuri 30.	12-05-1920	30
" " "	Iron and Manganese	3567.52	Ghatkuri 18,19,20,22 23,24,25,26,30	22-02-1910	30
" " "	Iron and Manganese	1506.24	Ankua 35,26,23,29,30 30,41	22-03-1910	30
" " "	Iron and Manganese	96.00	Ankua 25,40,P.F. 18	01-09-1919	30
" " "	Iron and Manganese	75.20	Ghatkuri 30 and Jilingburu.	10-08-1931	19
D.D. Agarwala	Iron and Manganese	619.65	P.F. 37 B	06-01-1931	20
Indra Singh	Iron and Manganese	718.40	Ghatkuri 30	03-03-1931	30
Vishanji Umarsi	Iron and Manganese	276.68	Ghatkuri 30 and P.F. 37 B	19-01-1932	10
<b>Total</b>		<b>11886 acres = 4831.71 ha</b>			

### 3.1. Mining Leases in the Post Independent Era in SARANDA

The mining lease has been issued to government and private sector companies over 9,765.48 hectare land of Saranda forest area out of which 1790.57 hectare area mostly in Noamundi is partially out of Saranda region. The forest area allotted to public sector is 6,633.30 ha, while 3132.18 hectare which includes the areas lying partially out of Saranda (such as in Noamundi area) has been allotted to private sector. Details of these mining leases of Iron ore and Manganese granted to Public Sector, Private Companies and grant of Prospecting leases are given below in tabular form. These figures were placed before the Jharkhand High Court recently in the form of affidavit by the Department of Mines and Geology, Government of Jharkhand.

**Table 4.2. List of Mining Lease of Iron and manganese ore granted to Public Sector Companies.**

Sl	Name of the Lessee	Village	Area in Ha.	Period
1.	M/s Steel Authority of India Ltd. Ispat Bhawan, Lodhi Road, New Delhi	Gua Duragaiburu (Ghatkuri RF)	1143.76	30 Years w.e.f. 22.02.1979
2.	M/s Steel Authority of India Ltd. Ispat Bhawan, Lodhi Road, New Delhi	Jhilingburu - I	210.44	30 Years w.e.f. 12.05.1950
3.	M/s Steel Authority of India Ltd. Ispat Bhawan, Lodhi Road, New Delhi	Jhilingburu - II	30.43	30 Years w.e.f. 12.05.1950
4.	M/s Steel Authority of India Ltd. Ispat Bhawan, Lodhi Road, New Delhi	Gua Topilore	13.76	30 Years w.e.f. 09.01.1970
5.	M/s Steel Authority of India Ltd. Ispat Bhawan. Lodhi Road, Delhi	Budhaburu (Maclanan Ankua R.F.)	8 23.83	30 Years w.e.f. 08.12.1945
6.	M/s Steel Authority of India Ltd. Ispat Bhawan. Lodhi Road	Buddhaburu (Ankua R.F.)	323.83	30 Years w.e.f. 07.12.1947
7.	M/s Steel Authority of India Ltd. Ispat Bhawan. Lodhi Road	Ankua R.F.	67.18	10 Years w.e.f. 14.06.1982
8.	M/s Steel Authority of India Ltd. Ispat Bhawan. Lodhi Road	Ankua R.F. (Sukrilutuburu)	609.57	30 Years w.e.f. 22.03.1949
9.	M/s Steel Authority of India Ltd. Ispat Bhawan. Lodhi Road	Buddhaburu (Dhobil) Ankua R.F.	512.95	30 Years w.e.f. 08.03.1948
10.	M/s Steel Authority of India Ltd. Ispat Bhawan. Lodhi Road	Kiriburu Maghahatuburu Karampada R.F.	1936.14	30 Years w.e.f. 28.03.1960

11.	M/s Steel Authority of India Ltd. Ispat Bhawan. Lodhi Road	Kiriburu Maghahatuburu Karampada R.F.	81.97	30 Years w.e.f. 01.10.1973
12.	M/s Steel Authority of India Ltd. Ispat Bhawan. Lodhi Road	Karampada R.F. (Meghahatuburu)	879.439	30 Years w.e.f. 06.02.1973
<b>Total Area</b>			<b>6633.299 ha</b>	

**Table 4.3. List of Mining Lease of Iron and manganese ore granted to Private Companies.**

Sl	Name of the Lessee	Village	Area in Ha	Period
1.	M/s Tata Steel Ltd. Noamundi, West Singhbhum	Noamundi	1160.36	30 Years w.e.f. 01.01.1982
2.	M/s Singhbhum Minerals Company, Station Road, Chaibasa	Khasjamda	265.88	20 Years w.e.f. 14.01.1972
3.	M/s Singhbhum Minerals Company, Station Road, Chaibasa	Karampada R.F.	141.64	20 Years w.e.f. 12.12.1976
4.	M/s T.P. Sao, Sadar Bazar, Chaibasa	Ghatkuri R.F.	202.35	20 Years w.e.f. 04.02.1974
5.	M/s Rungta Mines Ltd. Rungta House, Chaibasa	Ghatkuri R.F.	138.85	20 Years w.e.f. 10.11.1999
6.	M/s Rungta Mines Ltd, Rungta House Chaibasa	Meralgara	122.02	20 Years w.e.f. 10.11.1074
7.	M/s Padam Kumar Jain, Gandhi Tola, Chaibasa	Thakurani	84.68	30 Years w.e.f. 01.01.1982
8.	M/s Padam Kumar Jain, Chaibasa	Gandhi Toal, Rajabera	41.639	20 Years w.e.f. 19.02.1988
9.	Sri Revti Raman Prasad & Sri Anand Vardhan Prasad, European Quarter,	Itabaljori	33.70	15 Years w.e.f. 01.06.1981
10.	Sri Revti Raman Prasad & Sri Anand Vardhan Prasad, European Quarter, Chaibasa	Nuamundi & Meralgara	62.43	30 Years w.e.f. 05.01.1954
11.	Sri M.L. Jain Sons, Amla Tola, Chaibasa	Karmapada R.F.	202.35	30 Years w.e.f. 28.07.1973
12.	Smt Mitra Ghosh & Samir Kumar Ghosh, 98 Surendra Mohan Avenue, Kolkata- 700014	Nuamundi	20.07	30 Years w.e.f. 08.01.1963
13.	M/s Nirmal Kumar Pradeep Kumar, Gandhi Toal, Chaibasa	Ghatkuri R.F.	149.74	20 Years w.e.f. 28.07.1973
14.		Nuamundi	66.781	30 Years w.e.f. 25.11.1961

15.	M/s R. McDill & Company, Amla Toal, Chaibasa	Karampada R.F.	110.08	20 Years w.e.f. 10.05.1976
16.	M/s Anil Kumar Khirwal, Sadar Bazar, Chaibasa	Bandhuburu (Nuamundi P.F.)	22.53	20 Years w.e.f. 01.05.1976
17.	M/s Shah Brothers, Europen Quarter, Chaibasa	Karampada R.F.	233.89	30 Years w.e.f. 10.07.1972
18.	M/s Khatau Liladhar Thhakar	Kumrita	30.84	20 Years w.e.f. 06.06.1973
19.	M/s Kushal Arjun Rathor, Chaibasa	Nuamundi P.F.	31.97	20 Years w.e.f. 11.11.1979
20.	M/s Devka Bai Velji, Barajamda, Chaibasa	Ajitaburu Ghatkuri R.F.	46.62	30 Years w.e.f. 04.08.1953
21.	M/s Kamaljeet Singh Ahliwalia, Barbil, Odisha	Baraiburu	129.499	20 Years w.e.f. 05.09.1969
22.	M/s Kamaljeet Singh Ahliwalia, Barbil, Odisha	Bariaburu Tatiba	250.77	20 years w.e.f. 05.07.1969
23.	M/s Rameshwar Jute Mill, Barbil Odisha	Bariaburu	259.00	20 years w.e.f. 28.05.1966
24.	M/s Odisha Manganese & Minerals Pvt. Ltd. Kolkata	Ghatkuri R.F.	275.19	From 08.02.1993 to 27.02.2005
25.	Sri Chandra Prakesh Sarda, Kolkata	Itarbaljori	57.46	30 years w.e.f. 27.07.1983
26.	Sri Vijay Kumar Ojha, Barajamda, West Singhbhum	Barabaljori	21.27	20 years w.e.f. 23.01.0970
27.	M/s Usha Martin Ltd.	Ghatkuri, R.F.	163.90	20 years w.e.f. 18.08.2005
28.	M/s General Produce Company, Madhu Bazar, Chaibasa	Ghatkuri R.F.	70.68	20 years w.e.f. 01.01.1965
29.	M/s General Produce Company, Madhu Bazar, Chaibasa	Karampada R.F. Block no- 15	155.078	30 years w.e.f. 13.10.1976
30.	M/s Anandita Traders & Investment Ltd. Panchsil Apartment, Circular Road, Ranchi	Parmaboljori	47.15	20 years w.e.f. 28.02.2011
<b>Total Area</b>			<b>3132.177</b>	

**Table 4.4. List of Prospecting Licenses of Iron and Manganese ore granted to Public Sector**

Sl	Name of the Lessee	Village	Circle	Area in Ha	Period
1.	Jharkhand National Mineral Development Corporation Ltd. (Joint Venture NMDC & JSMD)	Karmapada R.F. (Sasangada North East Block)	Manoharpur	115.46	3 years w.e.f. 28.09.2013
<b>Total Area</b>				<b>115.46 ha</b>	

**Table 4.5. List of Prospecting Licenses of Iron and Manganese ore granted to Public Sector**

Sl	Name of the Lessee	Village	Circle	Area in Ha	Period
1.	M/s Sesa Goa Ltd. Goa	Dhobil (Ankua R.F.)	Manoharpur	700.00	3 years w.e.f. 10.03.2005
2.	M/s JSW Steel Ltd. Mumbai	Ankua (R.F.)	Manoharpur	1388.50	3 years w.e.f. 07.11.2007
3.	M/s Essar Steel Ltd. Hariza Road, Hariza	Bhimburu Matkamsarang (Akuan R.F.)	Manoharpur	568.75	3 years w.e.f. 12.05.2009
4.	M/s Tata Steel Ltd. Nuamundi, West Singhbhum	Ankua R.F.	Manoharpur	1808.00	3 years w.e.f. 31.07.2010
5.	M/s Arcelar Mittal India Ltd.	Karampada	Manoharpur	662.95	3 years w.e.f. 09.02.2011
<b>Total Area (ha)</b>			<b>5128.20</b>		

### 3.2. MINING LEASES APPLICATIONS ON SARANDA

The process of iron ore mining leasing over around 44,000 hectare land in different forest areas of Saranda is in progress at various levels. As per the details sent by the Jharkhand government's mining department to the Forests and Environment Department of the state a few years ago, there are many applications for mining lease on about 82,404.128 hectare forest land of Saranda. These applications are in the process of speedy disposal. It may be pertinent to mention that the total area of Saranda forest is only 86,000 hectare and hence, if pending leases are granted then there will be no trace of Saranda on the forest map of the world.

The details of iron ore mining lease applications that are pending, but under active consideration of the government in Saranda are given below:-

**Table 4.6. List of Pending Applications (under active consideration of the state)**

Sl no	Name of Applicant	Compartment	Area (Ha)	Date
1	Pawanjay Steel & Power Ltd.	Ghatkuri	991.48	11-02-2003
2	M/s Raipur Ward & Steel Ltd.	Ghatkuri	991.48	10-02-2003
3	M/s Sesa Goa Ltd.	Ghatkuri	1800.00	26-02-2003
4	M/s Mahesh kumar Bhukaniya	Ghatkuri	809.20	02-09-2003
5	M/s Stecko Power Ltd. Kolkata	Ghatkuri	400.00	15-09-2003
6	M/s Afresh Steel Chirkunda	Ghatkuri	290.85	08-09-2003
7	M/s Adhunik Alloy & Power Ltd	Ghatkuri	3566.55	05-09-2003
8	M/s Afines Steel Chirkunda	Ghatkuri	202.43	18-09-2003
9	Corporate Ispat Alloy Ltd. Durgapur	Ghatkuri	1311.24	29-01-2004
10	Abhijit Infra Structure Pvt. Ltd.	Ghatkuri	1633.03	29-01-2004

11	A.M.L. Steel & Power Ltd Chennai	Ghatkuri	991.52	26-02-2004
12	Vimaldip Steel power ltd.	Ghatkuri	1311.24	25-03-2004
13	Vimaldip Steel power ltd.	Ghatkuri	137.65	25-03-2004
14	Demko Smoke	Ghatkuri	100.00	12-03-2004
15	Annpurna Global Ltd.	Ghatkuri	141.07	17-08-2004
16	Solar Industries Ltd.	Ghatkuri	725.32	19-09-2004
17	Usha MartinLtd.	Ghatkuri	938.00	29-09-2004
18	Ispat Industries Ltd.	Ghatkuri	600.00	18-09-2004
19	A.M.L. Steel & Power Ltd Chennai	Ghatkuri	910.00	12-10-2004
20	Pusp Steel & Mining Ltd.	Ghatkuri	715.00	06-09-2004
21	A.M.L. Steel & Power Ltd Chennai	Ghatkuri	422.53	12-10-2004
22	Sunflag Iron & Steel	Ghatkuri	305.10	29-07-2005
23	Rungta Mines Ltd.	Ghatkuri	317.25	09-08-2005
24	Rungta Mines Ltd.	Ghatkuri	707.00	09-08-2005
25	Binny Iron & Steel Udyog Ltd.	Ankua	303.64	23-08-2005
26	Sesa Goa Ltd.	Ankua	750.00	26-02-2003
27	Electrocasting Steel Ltd. Kolkata	Ankua	937.50	31-07-2003
28	Corporate Ispat Alloy Ltd. Durgapur	Ankua	500.00	29-01-2004
29	Sunflage Iron & Steel	Ankua	472.75	09-08-2004
30	Sessal Mining & Industrial Ltd.	Ankua	200.00	10-12-2004
31	Synergy Pvt. Ltd. Ranchi	Ankua	500.00	29-10-2004
32	Spectrum Marks Title Pvt. Ltd.	Ankua	282.00	29-10-2004
33	Ballabh Steel Ltd.	Ankua	202.43	29-09-2004
34	V.K. Steel & Powert ltd.	Khudlibad	1190.00	25-08-2005
35	Ajaywal Minerals & Pvt. Ltd.	Khudlibad	473.00	13-12-2003
36	Refrize Pvt. Ltd.	Khudlibad	1190.00	08-09-2004
37	R.G. Steel Pvt. Ltd.	Khudlibad	1647.82	30-01-2004
38	Abhijit Infra Structure Pvt.Ltd.	Khudlibad	390.30	29-01-2004
39	Vimaldeep Steel Power Ltd.	Khudlibad	662.50	31-01-2004
40	Bermo Steel Ltd. Phusro	Khudlibad	1468.00	25-11-2004
41	Horizon Pvt. Ltd.	Karampada	560.00	01-11-2004
42	Pawanjay Steel and Power Ltd.	Karampada	1500.00	11-02-2004
43	A.M.L. Steel & Power ltd. Chennai	Karampada	926.00	13-03-2004
44	Ballabh Steel Ltd.	Karampada	206.79	10-12-2004
45	Brahmi Ispath Ltd.	Karampada	3566.54	20-05-2005
46	B.M.W Industries Ltd.	Karampada	61.71	22-09-2005
47	B.M.W Industries Ltd.	Karampada	206.78	22-09-2005
48	M/s. Enar Industries Inter Ltd.	Kasiapacha	206.79	05-07-2004
49	M/s. Monet Ispat Ltd.	Rajabera	3566.54	24-02-2003
50	M/s. Bisco Sponge Pvt. Ltd.	Rajabera	61.71	12-11-2003
51	M/s. Bisco Sponge Pvt. Ltd.	Kasiapach	206.78	12-11-2003
52	M/s. Vinni Iron Steel Company	Ghatkuri	317.25	23-08-2005
53	M/s. B.M.W. Industrial	Karampada	566.00	22-09-2005
54	M/s. B.M.W. Industrial	Karampada	1500.00	22-09-2005
55	M/s. B.M.W. Industrial	Samta	926.00	22-09-2005
56	M/s. Rashmi Cement Ltd.	Ghatkuri	470.25	25-10-2005

57	M/s. Rashmi Cement Ltd.	Ghatkuri	630.00	01-09-2005
58	M/s. Roshan Kumar Surin	Ghatkuri	450.00	05-10-2005
59	M/s. Bhushan Ltd. Kolkata	Ghatkuri	875.00	12-11-2005
60	M/s. Konti Steel Ltd.	Samta	203.00	01-12-2005
61	M/s. Bhushan Ltd. Kolkata	Kodlibad	600.00	12-11-2005
62	M/s. Jindal Steel & Power Company	Ghatkuri	210.00	06-01-2006
63	M/s. Jindal Steel & Power Company	Ghatkuri	3500.00	06-01-2006
64	M/s. Jindal Steel & Power Company	Kodlibad	Illegible	06-01-2006
65	M/s. Jindal Steel & Power Company	Karampada	2103.00	06-01-2006
66	M/s Jindal Steel & Power Company	Ghatkuri	770.00	06-01-2006
67	M/s. J.S.W. Steel Limited	Ghatkuri	973.52	07-02-2006
68	M/s. J.S.W. Steel Limited	Karampada	2387.00	07-02-2006
69	M/s. J.S.W. Steel Limited	Ankua	992.50	07-02-2006
70	M/s. J.S.W. Steel Limited	Karampada	1473.00	07-02-2006
71	M/s. Hari Zone Tol Udyog Limited	Ghatkuri	215.00	.....
72	M/s. Adhunik Alloys & Power Limited	Ankua	1225.00	.....
73	M/s. Jharkhand State Mining Development Co. Ltd.	Mangalburu & Jamhatuburu	1180.00	19-05-2006
74	M/s. Hi Grade Pellets Ltd.	Bhimburu & Matkam Sarang	568375.00	01-09-2006
75	M/s. Hi Grade Pellets Ltd.	Ghatkuri	230.48	01-09-2006
76	M/s. Essar Steel Limited	Jahumatibru & Mangalburu	950.45	01-09-2006
77	M/s Essar Steel Limited	Karampada	769.15	01-09-2006
78	M/s. Chaibasa Steel Pvt. Ltd.	Jeredaburu	150.00	07-03-2006
79	M/s. Bhushan Power & Steel Limited	Ghatkuri	1275.00	08-11-2006
80	M/s. Nilanchal Iron & Power Limited	Ghatkuri	349.76	06-02-2007
81	M/s. Nilanchal Iron & Power Limited	Karampada	735.53	06-02-2007
82	M/s. Nilanchal Iron & Power Limited	Ghatkuri	144.07	06-02-2007
83	M/s. J.S.W. Steel Limited	Kasiapaecha	2637.50	12-01-2007
84	M/s. J.S.W. Steel Limited	Roam & Lutuburu	862.50	12-01-2007
85	M/s. J.S.W. Steel Limited	Hatnaburu	1062.50	12-01-2007
86	M/s. J.S.W. Steel Limited	Ankua	8575.00	.01-2007
87	M/s. Banwari Lal Newatia	Karampada	438.38	12-02-2007
			<b>Total</b>	<b>650679.40</b>

### 3.3. SARANDA UNDER THREATS

Geographical areas of the Saranda forests under mining leases, prospecting licenses and pending applications for it are given under Table 4.2 to 4.6.. Adding together such areas comes to 65067.94 hectare. Whereas total areas of the Saranda forest division is around 80992.71 hectare. Forest block wise status of mining lease depicted below in graphical form. It is very obvious from the graph that if all the mining lease granted over the period then the existence of Ankua, Gharkuri, Karampada and Kodilbad RF will disappear from the map

of Saranda forest division and ultimately will result into disappearance of pristine Sal forest of Saranda from forest map of the world.

The future of Saranda forests, which is one of the most remarkable gift of Nature is under grave threat. The preliminary findings suggest that there is no dearth of laws, enactments, policies, programmes, provisions and pronouncements with regard to mining in the reserved and dense forest areas. There are certain clauses embedded in the Constitution for protection of nature and living beings on the earth and in its atmosphere on the basis of which a plethora of enactments, regulations and regulatory mechanism has been made to regulate the pace of economic activities in this regard. Yet the situation in Saranda is worsening day by day. The main reason behind it is that laws and enactments so made are violated more frequently than they are being observed for posterity. The handfuls of brilliant minds of our society who undertake oath of duty in the name of constitution and solemnly affirm to serve the people accordingly are in fact largely, if not, solely responsible for such predicament.

#### **3.4. MINING OPERATIONS**

Mining operations in the area is by open cast mining method, mostly mechanized, by a system of benches. The normal sequence of operations as collected from literature and observations in the field are:-

- Cutting and removal of the top surface soil by excavator/dumper
- Removal of blasted laterite by excavator/dumper
- Drilling of holes by wagon drill in harder ground
- Secondary breaking by hydraulic rock breakers
- Charging and blasting of holes
- Removal of overburden and waste in dumpers to the dumping site
- Slurry explosives with ANFO combination for blasting
- Hydraulic powered equipment for overburden and ore removal
- Dumpers for transportation of overburden and waste to the dumping site

#### **3.5. IMPACT OF MINING ON LAND**

There is obvious impact of mining operation on the land use pattern and topography of the area. It happens while removing forest cover of area under mining operation. Though only 26.93% of the total extent of lease land is currently broken up in Saranda, its adverse impact on the area is visible. Removal of vegetation and topsoil aided by natural precipitation has lead to erosion of soil. There is a possibility

that some of the threatened species of plants might have been wiped out, but it needs a deeper study. The Yugantar Bharati team in courses of its study tours undertaken in Saranda has taken a number of photographs showing adverse impact of mining. A few of such photographs are exhibited in annexure (II).

Environmental Impact Assessment (EIA)/Environmental Management Plan (EMP) should play an important role to identify the species in lease area and suggest remedial measures for its protection, but the plans submitted do not help. A proper identification and listing with detailed distribution of the species may be studied for conservation of rich biodiversity of Saranda. In fact, the EIAs/EMPs submitted by mining companies are not elaborate and do not look into this aspect. This aspect should be looked into afresh before clearing/breaking open for mining and remedial measures taken, wherever necessary.

### **3.6. MINING AND SURFACE WATER**

There is every possibility of reduction in the surface water due to the disappearance of the first and second order streams in the broken area. This in no way can be overlooked. It is unfortunate that the companies doing mining are violating the Environmental Clearance (EC) and Forest Clearance (FC) conditions. The compliances to these conditions are misleading. The field study team of Yugantar Bharati visited several mining operational areas and found that EC & FC condition are grossly violated.

Surface run off and effluent water carrying suspended particles flow down the hill slopes and join the river system. The soil erosion are aggravating the problem sediment load in riversystem. The mining companies have currently implemented several measures like series of check dams, garland drains, sedimentation traps and settling pits before discharge. But these steps are highly inadequate.

### **3.7. ROADS AND WILDLIFE**

One of the major impacts of mining and transportation of ore in the area is the generation of dust. Except for the SAIL operated Kiriburu, Meghataburu and Gua and Tata steel's Noamundi mines, all other private mines are using roads for transportation either to the OHP or railway yard. The length of the soil surfaced roads passing through forests for transportation of ore from the site could be up to 10 km and about 10 m wide. The e forest roads are also being used for transportation, which could be much longer than stated.

The worst of these may be witnessed in the area is the road between Gua to Pecha (approximately 25 km), where 80 trucks with iron ore

were seen plying, most of them not covered and the roads not made wet through sprinkling. The similar situation exist in the Ankua forest block where SAIL's use does ore transportation through forest road which is very crucial for wildlife. The number of vehicles plying daily from a particular mining site varies from a few to 270. Though trucks with water are used for dust suppression on roads through sprinkling, it is not at all effective especially during the hot season resulting in dust polluting the entire area. The vegetation along the entire length of the road is covered with dust thereby affecting the growth and reducing palatability.

The increased number and network of roads and the number of vehicles plying and the infrastructure lead to fragmentation of the habitat available to the wildlife. Impact on habitat due to transport infrastructure is receiving growing concern among conservationists. There had been a few studies on the complex impact of the rail lines, roads etc on wildlife and landscapes and even on the ecological processes. Yugantar Bharati team also studied the plight of wildlife including its confrontation with villagers and destruction of crops.

### **3.8. THREAT TO RARE SPECIES**

The heavy road traffic in mining areas has significant impact on rare species. In general, species that occur in small isolated populations, require large extensive areas for their home ranges, or exert long migratory movements, are especially sensitive to road mortality. In India, unfortunately, there had been only very few observations on the impact of roads on landscape and the behaviour of animals in terms of changes in activity, feeding habits, breeding and other aspects.

The surface of roads (mainly small roads with little traffic) may be used as pathways by larger mammals. Vehicles and humans may serve as vectors for plants, seeds or small, less mobile animals. This may offer an explanation for the high proportion of exotics and weed species found along roadsides. The spread of weeds and alien plant species along roads is considered as a severe threat to the native flora in many nature reserves. Observations along the roads in SARANDA also indicate the spread of *Parthenium* spp. along the road.

### **3.9. HUMAN - ELEPHANT CONFLICT**

The Saranda region faces serious threats to wildlife due to mining and other economic development activities. Many species found in Jharkhand are endangered and listed in Schedule-I of the Wildlife (Protection) Act, 1972. Among endangered species of Jharkhand,

tigers and elephants are internationally recognized as flagship species. Tigers now are rarely visible but elephants are commonly seen in Saranda.

The Government of Jharkhand after getting consent of the Government of India declared 4529 sq km Singhbhum Elephant Reserve under the central Elephant project of Government of India vide notification no. 3640 dated 26.09.2001 with a view to protect the elephant and other wildlife habitat and allow their unhindered movement in this corridor areas which includes 858.82 sq km of Saranda as Core Zone.

Saranda forest is ecologically very important for elephant habitat because it connects five very important elephant corridors, viz, Ambia RF to Ankua RF and Bera RF to Leda RF and Anjabera PF to Bichaburu PF; Basila PF to Badampahar RF and Saranda FD to Sidhamata RF & Karo reserve forests. Saranda is not only viable for Jharkhand elephant population but also very important for north Mahanadi elephant population of Orissa. Any development activity which is not sustainable, will harm the fragile Saranda forest and many important species (for biodiversity) will be affected.

During the last few decades, elephant habitats in Saranda have become degraded remarkably due to illegal felling, encroachment and mining. Villages around in the different forest divisions in Jharkhand faces serious problem of human- elephant conflicts every year and large number of human deaths and crop loss are reported in Jharkhand.

The continued shrinkage of the habitat is a major source of conflict between human and elephant. In recent years, increasing human - elephant conflict has been the major issue for the wildlife manager in India. The loss of habitat available to elephants has also cut off certain movement paths for this wide ranging species forcing them to move elsewhere for suitable habitat. Such situations escalate the conflict between man and elephant.

Human-elephant conflict poses a considerable threat to the elephant population in Saranda, which is highly threatened due to habitat loss due to mining, fragmentation of forest and corridor encroachment. The extensive alteration of elephant habitat by the mining process and human population is constricting the species into small pockets of land that are connected only by agricultural lands and human settlements and these pockets are hardly adequate to meet the food and water requirements of the elephant. As elephants have very distinct patterns of movement by which they seasonally utilize the

optimum habitats, it is likely that during this movement they come into contact with agricultural lands and human settlements. The human - elephant conflicts is due to economic loss because of crop and property damaged or even loss of human life.

### **3.11. IRREGULARITIES IN MINING**

Total area of Saranda forest division is about 80992.71 hectares out of which as area of about 9351.07 hectare has already been broken for iron ore mining in favour of different companies of private and public sector. 85 companies of private sector have applied for mining lease of iron ore in Saranda forest division.

The Forest and Environment department of Jharkhand government in February, 2006, attempted to declared 63,199.89 hectare out of SARANDA forest division inviolate for the sake of conservation of biodiversity, protection of wildlife habitat and other natural resources but this proposal is still pending.

The Secretary, Department of Forest and Environment, Government of Jharkhand put up a detailed note to the Chief Secretary, Government of Jharkhand on 11.12.2007 in which he pointed out that total reserve of iron ore in the lease hold area of Saranda is nearly 3000 MT. Even if 25 to 30 MT iron ore is produced annually this reserve will last for coming 100 years. The team further observed that the lease holder do not do any value addition to the iron ore.

Gross irregularities in allotment of iron and manganese ore mines, like favoritism and violation of relevant Act and Rules in recommendations of iron ore and manganese ore mining lease/prospecting license applications by the Jharkhand government to the Government of India on extraneous considerations, are prevalent.

The recommendations for mining leases/Prospecting license applications made to the central government by the Jharkhand government for iron ore / manganese ore mines in favour of concerned particular applications are based on fake geological reports. It is alleged that such reports were used to be fabricated in the Chaibasa office of the Asst. Director, Department of Geology, Government of Jharkhand.

About 100 such geological reports prepared by an Assistant Director, of West Singhbhum district, Chaibasa about available quality and quantity iron ore/manganese ore in different areas were collected by the Yugantar Bharati field team in course of study work. The reports are identical in nature and seem to be prepared sitting on the office table without paying visit to the concerned areas. The existence of

iron ore and manganese etc. or trace of any mineralization in these areas seems to be never done in this regard.

### **3.12. VIOLATION OF MINING LAWS AND ENVIRONMENTAL CONDITIONS**

There are shocking revelations with regard to the ways various illegal and irregular methods have been adopted to secure iron ore mining lease in the name of investment, value enrichment, and mineral production in the last few years. In this process, several relevant provisions of the MMDR Act 1957, MC Rules 1960 and MCDR 1988 have been violated. There is slackness in the compliance of the terms and conditions mentioned in the phase 1 and phase 2 of forest land leasing for mining. Its evidence is found in the compliance report of certain mining companies. But the government department accepts these reports. This has led to a tendency to violate forest and environmental conditions and its adverse impact is getting widespread. Besides such provisions need to be made objective and practical.

In February 2011, during the time of renewal of Chiria Mines lease, the then Forests and Environment Minister, Mr. Jairam Ramesh had overturned the decision to get the renewal done through the Forest Advisory Committee of the Government of India and issued an order for renewal at his level. Mr. Jairam Ramesh issued a proposal signed by him on 9th February 2011 in which several promises had been made in terms of several conditions. Later many special cases of forest land leasing in Saranda forest area has been disposed and permission granted to mining companies. The officials of the Government of India and the Jharkhand Government are under tremendous pressure and in dilemma regarding the proposal for approval of forest land leasing for mining.

The field team of Yugantar Bharati along with experts travelled entire Saranda forest region and collected firsthand information regarding iron ore mining operation and studied its overall impact on land, water, air, wildlife and environment of the area. The team also studied EIA and EMP reports of several mining companies as well as EC and FC guidelines and their implementations/violations. After analyzing the process of by the Forest Advisory Committee, Govt. of India and recommendation by the state forest department before it in case of granting leases to M/S Arcelor Mittal, M/S Electrosteel, M/s JSW and M/s JSPL our expert team, under the guidance of Dr. R.K. Singh, eminent environmentalist and wildlife expert of national repute, came to the following conclusion:-

- ❖ Saranda FD is part of core area of notified Singhbhum Elephant Reserve vide notification no. 72/2000 PE dated 24th March 2001. As mentioned in site inspection report of CF (Central) the proposed area is having presence of some much endangered species like Sloth Bear (Schedule-I), Asian Elephants (Schedule-I), Monitor Lizard (Part 2 of Schedule-II). Other species like Barking Deer (Schedule-III) etc are also found in the area.
- ❖ APPCF (Central) in his report clearly mentioned about his concern towards fragmentation of this forest. Similar observation has been also made by the CF, DFO and nodal officer. Therefore, PCCF has not clearly recommended this proposal and left the final decision on MoEF.
- ❖ The density of forest has been underestimated and seems to be assessed on top of ridge which was already mined in past and vegetation is very poor. The density of forest is much higher in valley portion towards western portion of proposed lease.
- ❖ Many 1st order Perineal streams (drainage) leading to river Koina originates from the proposed lease area of M/s Arcelor Mittal which is flowing at distance of about 3-4 km from the western lease boundary. The river Koina has already become a subject of major concern due to heavy silt load and is now becoming dry during summer months at many stretches. Allowing current mining will further aggravate the problem leading to death of lifeline of Saranda.
- ❖ On the eastern ridge of Saranda, only approx 3.5 km of linear forest patch is available to facilitate the movement of any wild animals between western to eastern part. Allowing the present mining will further reduce the linear connectivity to 2.0 km. If the closed mines also get clearances then it will further reduce to 1 km and if M/s SAIL will extend their activity towards northern side of lease then only 500 metre of linear patch will remain for the movement of wild animals.
- ❖ Transportation of mined ore will be a major concern and will need to be considered while appraising the project for forestry clearance. In Form-A, the user agency M/s Arcelor Mittal describe that they will transport the mined ore to railway siding. The nearest railway siding is available at Barajamda about 27 km from mine site. Approx 20 km of this road passes through hilly tract and the present width and road strength will not withstand wear and tear due and movement of heavy vehicles. Movement of heavy vehicles will also lead to frequent accidents

in hilly tract. The EIA report of M/s Electrosteel (which has already got Stage-1 clearance for 10 MTPA capacities in Saranda) clearly mentions that for evacuation of 10 MTPA capacity mines, required daily traffic density will be 6700 heavy vehicles and 100 light vehicles. So in present case it would be minimum 3000 heavy vehicles per day which will be in addition to current traffic density of about 1000-1200 heavy vehicles per day on the same road.

- ❖ The APCCF (Central) recommended transportation of ore through closed conveyor system but implementation of such recommendations on ground is doubtful in the case of M/s Arcelor Mittal due to following reasons :
  - a. On both eastern and western side of present lease area, there are private railway siding of M/s SAIL which will certainly not allow M/s Arcelor Mittal to use their railway siding.
  - b. Developing new railway siding means loss of more pristine forest particularly on western portion of proposed lease.
- ❖ Granting of forest clearance will bisect the state highway connection between Kiriburu Township and Barajamda. In case if mining starts then this highway will need realignment and more forest land will be required to construct new road.
- ❖ In mining operation, large quantity of water is required for dust suppression on haul roads. The project proponent has to depend on trapping of water of river Koina which is already under stress. In present case it will be not be feasible for project proponent to trap water from river Koina or Karo and therefore control of fugitive dust emission will be at the minimum level which will ultimately affect the surrounding forests.

Apart from the above following additional points also needs to be considered which are related with the decision of FAC taken in past:

1. Draft Integrated Wildlife Conservation Plan (IWCP) of Singhbhum forests was discussed in FAC meeting dated 2nd April 2012 and the comments of Dr. R.K. Singh on IWCP were discussed in details. The draft IWCP indicated 63379.89 ha area of Saranda forests to be kept as inviolate area. The table no. 4.3.39 of the draft report which is reproduced below ( Table 4.7) describe about the total area of various forest blocks and the areas to be kept as inviolate:

**Table 4.7.List of Areas to be kept Inviolable in Saranda**

S.No	Block	Total No of Compartments	Total Area	Virgin Compartments	Area of Virgin Compartments
1.	Ankua	54	16231.17	38	10983.21
2.	Ghatkuri	32	12466.80	17	6025.81
3.	Kudlibad	18	4752.22	18	4752.22
4.	Karampada	36	11695.54	16	5425.26
5.	Samta	49	13224.93	49	13224.93
6.	Tholkobad	48	10658.29	47	10332.84
7.	Tirilposi	52	12635.62	52	12635.62
<b>Total</b>		<b>289</b>	<b>81901.57</b>	<b>237</b>	<b>63199.89</b>

2. Meanwhile MoEF gave stage-1 clearance to M/s Electrosteel (55.5 ha) without placing the proposal in FAC which was earlier rejected by two times by FAC.
3. FAC in its meeting held on 15th May 2012 discussed about the current mining issues in Saranda FD in view of forest clearance to M/s SAIL. The Additional Chief Secretary specifically mentioned that clearance granted to M/s SAIL shall not be cited as an example to seek clearance for proposal of mining from other project proponents. In the meeting it was also highlighted that out of total 818 sq. km area of Saranda, 98 sq. km. area of forests are already diverted for the iron ore mining and the state is further having proposal for diversion of additional 500 sq.m forests area of Saranda .FAC gave the following specific direction to the state govt:
  - a. The state govt. ensure the submission of final IWCP which must address the issues related with whole area and must spell out long term vision of state in respect to Saranda for consideration of any new proposal. (FAC also recommended incorporation of all the review comments of Wild life Institute of India (WII) and other experts while finalizing the IWCP.)  
The state govt. should clearly depict identified inviolate areas on map and submit the same within two months.
  - b. FAC in its meeting held on 22nd Jan 2013 granted Stage-1 clearance to M/s JSW (998.7 ha) and M/s JSPL (512.43 ha) without obtaining the compliance of recommendations of FAC meeting dated 15th May 2012 from State and increased total forest area diverted for mining to 113 sq. km. FAC made two specific recommendations:

- i. The state govt. shall assess the extent of forest land for the purpose of forest connectivity and the use of wildlife and elephnats in particular by undertaking scientific study for direct and indirect signs related to occupancy and habitat utilization. The state govt. shall take services of independent experts especially those having experience and exposure of Saranda region and shall submit findings alongwith proposal delineating out forest areas from the lease which may be necessary for safe movement of elephnats.
- ii. The state govt. shall assess the mining/reclamation plan in a holistic way along with similar plan of adjacent operational mines and modify them, if requiured, with a view to ensure connectivity of the forests patches is maintained by breaking up fresh land nearer to already broken up areas and reclaiming them simultaneously as the mining progress.
- c. Meanwhile it has come to the knowledge of Yugantar Bharati that the project proponents, whose proposals were under active considerations at various stages, connived with experts involved in the preparation IWCP plan and through local DFO changed the inviolate area statement which was mentioned in draft report to exclude their mining areas. The table given depicts the area and forest compartment which might have been excluded from inviolate area in final IWCP :

**Table 4.8. List of forest compartments which might have been excluded from inviolate area**

<b>Forest Block</b>	<b>Forest Compartment</b>	<b>Area (Ha)</b>
Kodalibad	1,2,3,4,5,6 part	663.00
Ghatkuri	5,7,8,9,10,13,14,15,16,17,20,22 part, Kesiapecha PF	2244.10
Karampada	34,35 part	202.35
Ankua	12,13,14,16,18,19,20,22,23,24, 25,28,29 part	4077.65
	<b>Total</b>	<b>7187.10</b>

There is no shortage of iron ore in India. The reply of Parliament question clearly indicates that surplus iron ore is available in India which could easily be consumed for domestic purpose instead of export. If the ban on export of iron ore is imposed then at least for the next 50 years there will be no need to break any new area for iron ore mining.

## **INITIATIVES FOR MAINTANING PRISTINE GLORY**

It is not that the Government of India or the Jharkhand government is unaware of the crisis looming large over the reserve and protected forests of Saranda. The Yugantar Bharati experts' team did dig into the files of the forest as well as mines department of the state government and found that the govt. of India warned the State Govt. as back as in the year 2003 regarding the adverse impact of mining and economic activities on the dense and reserve forest like Saranda. But the system is sleeping over the initiatives to take care of the protection of the pristine forest like Saranda. The then Director General of Forests & Special Secretary, Ministry of Environment & Forest, Government of India Mr. M.K. Sharma wrote a D.O. letter bearing D.O. letter bearing No. 11-28/2002-FC dated June 16, 2003 to the then Chief Secretary, government of Jharkhand, Mr. G Krishnan. In this letter Mr. Sharma says "as you will appreciate that mining in the 'reserved forest' area is totally against the forest conservation and that too for a longer period. In most of the cases, these commercial liabilities have been created prior to the enactment of the Forest (conservation) Act.1980. It has been observed in some cases that mining activities have continued for more than 70?80 years. The continuous mining in the forest area is detrimental to the forest health, existing wild life habitat and the surrounding environment. This must be brought to a halt as early as possible.

To begin with, the central govt. is not allowing such commercial activities in National Parks, Sanctuaries etc. unless the projects are of National importance having multidimensional socioeconomic benefits. Now there is an urgent need to extend this principle in all the Reserved Forest sand the dense forests as well. For longevity of our precious Forests and for environmental consideration, we should not allow mining in the Reserved Forest and dense Forest area for an indefinite period.

It is desired and it is also need of the time that we should initiate steps to phase out such commercial activities from the reserved forests and dense forest areas in a time bound manner. But, considering the principle of natural justice, we should give ample opportunity and sufficient time to various agencies involved in the continued mining operations in the forest areas, a liability created over a period of time to wind up their activities in a phased manner. While doing so, if necessary, we may explore possibilities of gradually shifting to underground mining for which the incentives maybe provided to mining sector.

May I request you to consider the matter in respect of your state and bring a radical change for betterment of our forests and environment for future generations. Further, you may like to call a meeting of the Department of Mines of your state and various mining lease holders to discuss these matters to gradually shift to total closure of mining in reserve forest and dense forest areas."

On the basis of this letter a meeting was held under the chairmanship of Principal Chief Conservator of Forest (PCCF), Government of Jharkhand on 17.02.2005. Again a high level meeting was held under the chairmanship of the Secretary, Forests & Environment Government of Jharkhand on 28/29.03.2005. In these meetings it was decided to phase out the mining and related activities from the dense and reserve forests such as that of Saranda.

Based on the recommendations of the above meetings, the PCCF wrote to the Secretary of the department vide letter no. 19M-1(5)19/2003-642 dated 14.02. 2006 to do needful for issuance of a gazette notification to declare about 63,119.89 hectares of SARANDA forest area as virgin and inviolate compartment where no mining activities can be carried out. The list of the compartment wise proposed inviolate areas is given below.

**Table 5.1. List of proposed inviolate compartment in Saranda forest division**

**PROPOSED INVIOULATE COMPARTMENT IN SARANDA FOREST DIVISION**

Sl no	Name of Area	No of Compartment	Total Area (Ha)	No of Inviolate Compartment	Area of Inviolate Compartment (Ha)
1	Ankua	54	16231.17	38	10983.21
2	Ghatkuri	32	12466.80	17	6025.81
3	Kudlibad	18	4752.22	18	4752.22
4	Karampada	36	11695.54	16	5245.26
5	Samta	49	13224.93	49	13224.93
6	Tholkabad	48	10659.29	47	10332.84
7	Tirilposi	52	12635.62	52	12635.62
<b>Total</b>		<b>289</b>	<b>89901.57</b>	<b>237</b>	<b>63119.89</b>

It is unfortunate that the state government has not till now issued gazette notification to save the pristine forest of Saranda from the onslaught of mining & related economic activities. In between, the Department of Mines, Government of Jharkhand has granted mining

leases to several companies and mining lease applications of many more companies are in advance stage of granting leases in Saranda area, overlapping many inviolate compartments which will be detrimental to the overall environment and ecology of the region.

Even the Government of India, too, is not serious to save Saranda from adverse impact of mining and related economic activities. One example will be sufficient to prove this point. The then Minister in the Ministry of Environment and Forests, Government of India in disregard to the recommendations of the Forest Advisory Committee (FAC) himself ordered diversion of 595 hectares area of Chiria Mines forest land in Saranda. Keeping in view the ecological sensitivity of the Saranda forest areas he put certain conditions which were never implemented. This decision of Mr. Jairam Ramesh proved bolt from blue to the conservationist and encouraged illegalities.

In fact forestry clearance of Chaibasa mining lease has opened the Pandora box to help other mining company such as M/s JSW, M/s Tata Steel etc. for obtaining forestry clearance in Ankua forest block in future. This was proved by granting stage-1 forestry clearance to M/s. JSW in Ankua forest block.

Gross irregularity in the form of proxy mining is rampant in iron ore rich areas of Jharkhand and the state government has failed to stop proxy mining of iron and manganese ore from Saranda reserve forest. Several companies are engaged in proxy mining through agreements from granted lease hold areas of other lessees in violation of section 37 of mineral Concession Rules Rule 1960. Further, the provision of section 11(3) of mines and minerals (Development and Regulation) Act 1957 was grossly violated during recommendation for grant of mining lease in favour of such companies which do not have any proper experience of mining, technical skill and adequate investment in comparison to those companies which has requisite mining experience, required technical skill and much more investment capacity.

## CONCLUSION

The natural resource in dense and reserve forests like Saranda are gift of nature and requires considered steps to be taken by the government at Centre and State for its conservation, sustainable utilization and equitable sharing of the benefits arising out of utilization of genetic resources according to the provision of Biological Diversity Act, 2002.

The State and the Central government has not examined desirability, need and necessity for grant of mining leases in dense, reserve and protected forest areas by soliciting expert opinions in the matter of competing priorities of conservation to the reality that conservation of forest wealth will result in conservation of the mineral wealth also and the State should refrain from trading short term gains for long term losses or eternal losses

### 5.1. SUGGESTED ACTIVITIES

#### 5.1.1. SUSTAINABLE MINING

In our opinion, the Saranda region presents a strong case for formulating sustainable mining policy.

The Yugantar Bharati expert team procured and analyzed the relevant statistics of iron ore production, utilization and exports from various sources in the different states of India including that of Jharkhand. It is amazing that production of the Iron ore in the country as well as in Jharkhand is much more than its utilization. Large amount of iron ore lumps and fines are exported to various countries among which share of China are the largest.

There is also a need to ponder over the fact as to how much iron ore is being produced in the country, how much is consumed and how much is being exported. The Government of India has put forth factual data for the year 2008-09, 2009-10 and 2010-11 before Parliament on 16 December 2011. According to it, 2129.60 lakh tonne iron ore was produced in the country in 2008-09, out of which 1262 lakh tonne was used in the country while 867.40 lakh tonne was exported. Similarly, the total iron ore production in the year 2009- 10 and 2010-11 was 2185.50 lakh tonne and 2079.90 lakh tonne respectively, out of which 1308.20 and 1268.10 lakh tonne were used in the country respectively and 877.30 and 811.80 lakh tonne were exported respectively.

It means that there is a surplus production of iron ore in the country today and every year a huge volume of iron ore is being exported. There is a confederation of the mineral industry in the country known as FIMI (Federation of Indian Mining Industries). In its bulletin published on 15th March 2013, it has given data on the iron ore exports to China from different

countries. According to it, India has exported 720 lakh tonne and 335 lakh tonne iron ore to China in 2011 and 2012 respectively.

Similar situation is in Jharkhand as well. Jharkhand produced 213.20, 225.40 and 231.70 lakh tonne iron ore in the year 2008-09, 2009-10 and 2010-11 respectively. The total consumption of iron ore during these years was 139.10, 142.80 and 116.00 lakh tonne respectively, while the total exports were 74.10, 82.60 and 115.70 lakh tonne, respectively. It is clear that Jharkhand, too, is producing surplus iron ore. In all, Jharkhand has a target of producing 250 lakh tonne steel annually till 2020. For this, approximately 400 lakh tonne iron ore will be needed annually. In the next 90 years 3600 lakh tonne iron ore will be required annually while there is a store of 3500 lakh tonne in the already allotted mineral lease in Jharkhand. If the production continues at this pace, there is enough iron ore under leased mining in Jharkhand. Then what is the justification of issuing fresh iron ore mining lease on a wholesale rate? The country has a somewhat similar situation. There is a total store of 28,52, 61, 58 lakh tonne iron ore in India out of which 17,88,20,98 lakh tonne is haematite and 10,64,40.60 lakh tonne is magnetite till 2020, 2880 lakh tonne iron ore will be required to produce 1800 lakh tonne steel annually at the national level. If the current pace continues for the next 50 years, the country will need a total of 1,44,000 lakh tonne iron ore. Granting of mining lease in irregular shape and small area also leads to unscientific mining and therefore, all the minerals stocks are not fully exploited thus leading to breaking up of new areas. The relevant statistical figures may be seen at Annexure - iv, v and vi in tabular form with this book.

**Table 5.1. State-wise details of Iron ore mines**

<b>State</b>	<b>No of reporting Iron Ore Mines [2010-11(P)]</b>
Andhra Pradesh	29
Goa	70
Jharkhand	20
Karnataka	86
Madhya Pradesh	6
Maharashtra	15
Odisha	60
Rajasthan	1
Total	297

(P) : Provisional (Source : MCDR Returns)

The figures in the tables above indicate that there is no shortage of iron ore in the country and as on 1.4.2010, the total resources of iron ore in the country was 28.52 billion tonnes which is likely to increase with further exploration and due to reduction of the threshold value of iron ore from 55% Fe to 45% Fe. Hence before issuing new iron ore mining leases in the areas like SARANDA forest one must think over the fact that iron ore production for steel making in India should be need based. Instead of exporting the raw material in the form of iron ore it should be fully utilized in the country.

The figures in the tables above clearly indicate that in fact surplus quantity of iron ore is produced from existing mines in India which is sufficient to fulfill the need of our domestic consumption. If the export of iron ore is stopped then at least for next 50 years there will be no need to break any new area for iron ore mining.

### **5.1.2. ENRICHMENT OF IRON ORE'S QUALITY**

A major portion of the natural resource is wasted due to the tendency of the steel industry not to use low quality iron ore. Despite availability of the technique to remove impurities from the iron ore having relatively low iron content, very few steel industries are making use of it. As a result, low-iron minerals are getting wasted. Now there is a technique to enhance the iron content of haematite and magnetite minerals from 36 and 29 per cent to 67 and 75 per cent, respectively. In such situation, using low-iron minerals in huge volumes is better than destroying forest areas by issuing lease of new mines.

### **5.1.3. USING FINES THROUGH PELLETIZATION**

The ratio of lumps and fines is almost equal in the production of iron ore in Jharkhand and the country. The fines are, in fact, in excess. In certain years, the ratio of lumps and fines is 45 to 55. The steel industry can make better use of fines by making their pellets and can also turn it to their profitable use in their own country instead of exporting the same at cheaper rate. The good sign is that the tendency to use pellets is growing in the Indian industry. India stands 7th in the world in the production of pellets. India is producing 180 to 200 lakh tonnes pellets annually. Investors are coming forward to set up pellet plants in Angul in Orissa, Hospet in Karnataka, Hajira in Gujarat and in other places. Jharkhand should also proceed in this direction. This will lead to proper utilization of a valuable natural resource and conserve natural heritage of Saranda.

### **5.1.4. GREY STEEL VERSUS GREEN STEEL**

There is an abundance of iron ore, manganese and other minerals of

varied qualities in the underground of Saranda in the form of grey steel while at the same time there are rich resources of dense forests and biodiversity famous as 'Sal' on the ground. There is a popular saying about the 'Sal' which goes thus: "sau varsh khada, sau varsh para, par jau bhar nahi sara" (stood for a hundred years, lay for hundred years, but was never found rotten). The present direction of development is inclined towards maximum consumption of grey steel. Giving importance to material as compared to Nature has become its characteristic. This development policy is based on the principle of capital and consumption through value enrichment of grey steel at the cost of green steel. The time has come to think again on its present direction and pace from the point of view of unabated development and mutual adjustment. For this the utilization and conservation of both natural resources of the dense Saranda forest is quintessential so that the succeeding generations of India may get the opportunity to benefit from the utilization of green steel as well as grey steel.

This is possible only when the natural resources of Saranda and the adverse impact of mining of iron ore and other minerals and other related activities on the environment of Saranda are assessed. There is also a need to find out the limit of tolerance of bearing the burden of such adverse impacts on the environment and ecosystem of Saranda. The development burden tolerance limits of Saranda should not be crossed and the development plans should be chalked out keeping this in mind and giving it top priority.

In this context, the teaching of Mahatma Gandhi may show us the way- "The Nature has enough resources to fulfill everyone's needs, but not enough to fulfill everyone's greed."

#### **5.1.5. CARRYING CAPACITY BASED DEVELOPMENT PLANNING FOR SARANDA FOREST REGION OF JHARKHAND IN INDIA**

The Saranda forest with its specific natural domain represents a range of 700 vegetated hills of varying altitude. The famous heritage of genetic fund, the Saranda, harbours a multitude of flora and fauna. The forest is famous worldwide for its quality "flagship species Sal trees" and haematite iron ore.

During the past, the extensive undisturbed area of nearly 82,000 hectares of the forest was safe haven for wild creatures and provided sure guarantee of their survival. Unfortunately we are witnessing reckless exploitation natural resources of the Saranda forest i.e. parallel with rapidly developing technology during the last decades. The forest is evidently under assault from developmental projects, unprecedented deforestation,

growing mining operation, political interference and human wildlife conflicts. The extensive iron ore extraction is drastically altering the balance of ecological factors (i.e., air, water and soil) and biological nature especially in the mined areas of the forest. It is against the approach of sustainable development and conservation of natural resources.

In view of the guidelines of 11th and 12th Five year plans for conservation, there is an urgent need to assess the carrying capacity based development in order to regenerate everlasting sustainability of the forest environment. This can be done by initiating fresh environment impact analysis, based on concurrent attention.

The following issues with regards to the carrying capacity based developmental planning needs urgent attention of planners and policy makers :-

- A) Ecological crisis to extraction of iron ore repository
- B) Correction between economic development and environmental transformations.
- C) Impact of the expanding network of roads and cultivated areas on the sustainability of forest.
- D) Protection strategies of natural resources.

## **5.2. FUTURE PLAN OF ACTION**

This should be an action research project on the following aspects to improve the quality of life of inhabitants:

- i. Alternative sources of livelihood
- ii. Improving agricultural productivity through scientific management
- iii. Literacy and Education
- iv. Health , with emphasis on women and girl child
- v. Sanitation and drinking water
- vi. Establishing linkages with government welfare schemes

## **5.3. RECOMMENDATIONS**

1. Imm]e current richness and diversity of flora and fauna including micro invertebrate through stratified sampling. Similar study is required in non mining areas too to compare the data.
3. Study of habitat occupancy and utilization in mining and non mining areas.

4. Survey of water discharge, its availability and quality in mining and non mining area.
5. Delineation of the boundary of the entire approved and identified mining lease along with delineation of broken area of the entire operational mines of Saranda and surrounding forest divisions (both Orissa and Jharkhand) on Digital Elevation Model (DEM) in GIS domain to develop landscape level integrated mining and reclamation plan to minimize fragmentation of prime elephant habitat due to honeycomb mining scenario.
6. Monitoring of water discharge and physico-chemical characteristics (particularly the total suspended solids to assess silt load) of all the perennial streams/springs/'nallah' originating from in and around the entire approved and identified mining lease along with monitoring of water discharge and physico-chemical characteristics of major river system.
7. Proper survey shall be undertaken to prepare intensive inventory along with species richness/diversity/habitat utilization/occupancy of flora and fauna around the entire approved and identified mining lease. The same study shall be repeated after every 5 year interval to ascertain the changes/damage to neighbouring flora and fauna of an active mining lease.
8. Impact zone of individual mines shall be assessed to ascertain the total area (forest and non forest) to be affected by operational and proposed mining operations before allowing operation of any closed/new mines.
9. Non-mineralized zones of Saranda and surrounding forest areas shall be brought under Protect Area network as per the provisions of the wildlife (Protection) Act, 1972.
10. Emphasis shall be given to fence only the broken area of operational mines instead of fencing the entire mining lease boundary to facilitate the habitat utilization and movement of wild animals in intact forest patches of unbroken area of mining lease.
11. Discourage the transportation of mined mineral through road transport to the railway siding from mining lease. Lessee shall make investments to use closed conveyor system for the transportation of minerals to railway sidings.
12. Strict enforcement on no road transportation of minerals between sunsets to sunrise to mitigate the fugitive dust emission during transportation of minerals.

13. No mining or heavy machinery movements at mining site between sunsets to sunrise.
14. No residential colonies shall be allowed to come up in the forest area and the current colony shall be phased out.
15. Proper illumination system shall be adopted in mines to reduce open to glare in sky to facilitate migration of birds.
16. Constitution of an expert/monitoring committee by the state comprising members from civil society, forest officers, people representative, wildlife experts etc. to evaluate current compliance status of Environmental and Forest Clearance conditions stipulated for individual operational mines including information in public domain to ascertain the strict compliance of Environmental and Forest Clearance conditions.
17. Discourage the allotment of small mining leases which could result into locking of precious mineral resource due to unavailability of land for lateral expansion of mining operation required for mining of minerals from depth. Only for Integrated Steel Plant's captive use, mining shall be allowed.
18. Emphasis shall be given for management of 2nd or 3rd order drainage system to maintain proper water discharge in river system through catchment area treatment plan.
19. Emphasis on cumulative and strategic impact assessment while allowing any new mining operation.
20. Proper enquiry to be made against the forest officials who has allowed transportation of mineral through forest areas (including forest road widening) without any forest diversion approval under the Forest Conservation Act, 1980.
21. Assessment shall be made to compare gain/loss in per capita income of locals during life of a mine due to loss in MFP/NTFP. The loss shall be compensated by the mining company as annuity.
22. Cooperative system shall be put in place to help forest dwellers in collection and marketing of MFP/NTFP.
23. Determination of virgin areas may prove to be a milestone in the direction of conservation of Saranda.
24. Immediate removal of fence from the lease boundary to facilitate the movement of wild animals particularly on eastern boundary of Saranda.

# **PART - II**



## SHAH COMMISSION AFTERMATH

In the background of widespread illegality in iron ore mining in Saranda forest division of Jharkhand and elsewhere in the country the Government of India set up Shri Justice M. B. Shah Commission of Inquiry for Illegal Mining of Iron Ore and Manganese vide Notification No. S.O. 2817(E) dated 22nd November, 2010. It is stated in the said Notification that there are reports that in the iron ore rich States mining, raising, transportation and exporting of iron ore and manganese ore are done illegally and/or without lawful authority in one or more of the following:-

- A) Mining without a licence;
- B) Mining outside the lease area
- C) Mining in a lease area without taking approval of the concerned State Government for transfer of concession;
- D) Raising of minerals without lawful authority;
- E) Raising of minerals without paying royalty in accordance with the quantities and grade;
- F) Mining in contravention of a mining plan;
- G) Transportation of raised mineral without lawful authority;
- H) Mining and transportation of raised mineral in contravention of applicable Central and State Acts and rules thereunder;
- I) Conducting of multiple trade transactions to obfuscate the origin and source of minerals in order to facilitate their disposal;
- J) Tampering with land records and obliteration of inter-State boundaries with a view to conceal mining outside lease areas;
- K) Forging or misusing valid transportation permits and using forged transport permits and other documents to raise, transport, trade and export of minerals;

The terms of reference Shah Commission was as below :-

1. To inquire into and determine the nature and extent of mining and trade and transportation, done illegally or without lawful authority, of iron ore and manganese ore, and the losses therefrom; and to identify, as far as possible, the persons, firms, companies and others that are engaged in such mining, trade and transportation of iron ore and manganese ore, done illegally or without lawful authority;“2. To inquire into and determine the extent to which the management,

regulatory and monitoring systems have failed to deter, prevent, detect and punish offences relating to mining, storage, transportation, trade and export of such ore, done illegally or without lawful authority, and the persons responsible for the same;

3. To inquire into the tampering of official records, including records relating to land and boundaries, to facilitate illegal mining and to identify, as far as possible, the persons responsible for such tampering; and
4. To inquire into the overall impact of such mining, trade, transportation and export, done illegally or without lawful authority, in terms of destruction of forest wealth, damage to the environment, prejudice to livelihood and other rights of tribal people, forest dwellers and other persons in the mined areas, and the financial losses caused to the Central Government and State Governments.

The Commission was also required to :

1. Recommend remedial measures to prevent such mining, trade, transportation and export done illegally or without lawful authority,
2. Submit its report to the Central Government as soon as possible but not later than eighteen months from the date of its first sitting, and
3. Submit interim reports to the Central Government before the expiry of the said period on any of the matters specified in the notification and recommend specific steps that may be required to be taken urgently to curb the menace of such illegal mining, trade and transportation.

The shah commission began its work in Jharkhand in March 2011 by issuing questionnaire to secretaries of relevant departments. It visited Jharkhand from 12.4.2012 to 15.4.2012, held meetings with secretaries and other officials of different departments, collected relevant informations, analysed the procedures of lease grant and renewal in the light of MMDR Act, MCR and other rules and regulations and its violation in course of mining and transportation of minerals.

The Commission submitted its First Report on illegal mining of iron and manganese ores in the State of Jharkhand on 14th October, 2013. The report which was prepared taking into account the comments received from concerned Central Ministries / Departments and Government of Jharkhand highlights illegal mining

of iron and manganese in Saranda forest division in the State of Jharkhand. It vividly describes rampant irregularities and prevalent corruption at various levels of governance.

Salient features of the action taken report of the shah commission may be summarised in brief as below :-

1. There is planned Violation and Misuse of Rule 24A of Mineral Concession Rules, 1960 (MCR) which provided for deemed extension/ deemed refusal in past, by the lessees and concerned authorities.
2. There is systematic failure in implementing the Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act, 1957) and Rules therein.
3. Lessees were permitted to continue in possession of the mining area for prolonged periods; sometimes running in decades, without deciding renewal application under the guise of deemed extension, over-looking the provisions of Section 4 of the MMDR Act, 1957.
4. Also, leases were not determined, though a clear violation of provisions of deemed refusal prevailing before 27.09.1994 under Rule 24A of MCR, 1960 instead allowed mining illegally with a huge loss to the State.
5. Lack of decision on renewal application for years together led to all mal-practices because unusual delay breeds unusual corruption.
6. Out of 42 leases for which the State Government has submitted the records, 40 leases of iron ore and/or manganese are running under deemed extension under Rule 24A of MCR, 1960 (even in cases of some leases which should have stood terminated because of deemed refusal),
7. That is to say, approx. 95% of leases are running by taking undue advantage of the said Rule. Many of (24 numbers) them were ineligible under the law because there were no subsisting valid leases on 27.09.1994.
8. This is proved beyond doubt that about 18 mining leases were allowed to continue without having statutory clearances under Environmental Impact Assessment Notification 1994, F.C. Act, 1980 and so on.
9. In 24 cases, most of the lessees have taken EC, after long delay.
10. The deemed extension provisions have been facilitated by the

concerned officers, persons in public life, lessees and other concerned authorities together to earn ill-gotten money with no restriction.

11. The Shah Commission report tells in no ambiguous terms that appropriate action should be taken against the concerned authorities for misuse of the law for extending undue favour to the lessees and loss to the State.
12. The report also tells that the concerned officers who have not dealt with the lease application within stipulated time, should also be held personally responsible for their lapses and appropriate action should be taken against them.
13. The report further opined that out of 8,897.84 ha. of leased area for 24 leases; 7,652.08 ha. area is forest land. So, it is recommended that instead of granting fresh leases in the Saranda forest, these all leases should be terminated by following due process of law and then granted by public auction or otherwise whichever is applicable within law, after notifying under Rule 59 of the MCR, 1960 so that there may not be further depletion of the Saranda Reserve Forest which is also a part of notified Elephant Reserve and proposed Conservation Reserve by the Expert Committee notified on 27.08.2011.
14. The report mentions that considering the aforesaid position and mining operation in dense Saranda Forest which is admittedly having wildlife and is one of finest elephant habitats, would be destroyed without getting further benefit of iron ore.
15. The report says that in Saranda forest area existing Sal trees and associates are already destroyed causing adverse effect over the environment. Hence, capping of production in each mine is must and action should be taken by respective authorities against the violators.
16. The Shah Commission report lamented that no body has thought for conservation of iron ore which is necessary for all the times to come, at least, for future generations. Secondly, nobody has assessed impact on environment from increased production. Thus, the concerned authorities have totally failed in discharging their duties. In this process Concept of scientific mining is totally ignored.
17. The Shah Commission report observed that Indian Bureau of Mines (IBM) in many cases has given post–facto approval which is against

the norms of Rule 10/12 of the MCDR, 1988. By such act the IBM used to cover illegalities committed by the lessee in the past.

18. The M.B. Shah enquiry Commission assessed that an approximate quantity of 11,92,70,333.413 MT iron ore for an approximate value of Rs.144,03,38,95,307/- (i.e. approx. 14,403 crores) and an approximate quantity of 1,30,448.686 MT of manganese for an approximate value of Rs.138,08,96,398/- (i.e. approx. Rs.138 crores) is extracted illegally and without lawful authority. The said amount of ₹14,541 crores should be recovered from the lessees under Section 21(5) of the MM(DR) Act, 1957.
19. While considering the effects of illegality in mining on Environment of Saranda Forest the Shah Commission report reiterated the famous saying that "It is accepted principle of inter-generational equity that present generation has a solemn responsibility to protect and improve the environment for the present and future generations. For this, present generation must safeguard the natural resources of the earth through careful planning and to undertake to pass on to the future generations.
20. The Shah Commission report reminds that "It is incorrect to equate conservation with preservation. Preservation of minerals may be resorted to only in the case of strategic or scarce minerals, no such measures of preservation are required with respect to iron and manganese ore in India at the present. It is important to pass on the environment to future generations as intact as the one, it inherited from the past generation.
21. In the State of Jharkhand, most of the mines are in the Saranda forest area which is the finest elephant habitat and part of Notified Elephant Reserve and also in highly eco-sensitive, as regards bio-diversity. Most of the mines are very close to the rivers (i.e. Koena and others) or natural streams and in many of the cases; streams are either passing through or quite close by the leased area and catchments area. The sudden increase in production would increase the effective area under mining and result into drying of these streams, degradation of environment, loss of micro bio-diversity of these streams, adverse effect on all roads, agriculture, horticulture, ground water table level, pollution of air and water and eco-system as a whole. Modifications of mining plans to increase production without knowing the real effect on a self contained Saranda ecosystem has raised many questions on environment of the area. It may leave on a permanent impact which would be difficult

to rejuvenate the climatic climax natural forest.

22. Preservation of iron ore:—"The iron ore reserve and resource is estimated about 4,596.621 Million Tons (2,304.142 Million Tons Iron Ore Reserve and 2,292.479 Million Tons Iron Ore Resources). Almost all these iron ore reserves of Jharkhand State are in the dense reserve forest including Saranda Reserve Forest and Elephant Corridor.

There are 42 leases of iron and/or manganese ore which are granted by the State Government covering an area of 11,524 ha. As per the State Government's Report, 34 mining leases are operating and 08 mining leases are non-operating. Estimated Iron Ore Reserve of 34 mining leases is 3,465.676 Million Tonnes. From the report of Department of Mines & Geology, State of Jharkhand since the year 1993-94 onwards upto 2012-13, the official production is quantified about 375.794 Million Tons. By deducting the quantity of iron ore already produced and removed, the reserve remains in the State would be around 3,089.882 Million Tons of +55 grade and above. (i.e.  $3,465.676 - 375.794 \text{ MT} = 3,089.882 \text{ MT}$ ).

The MoEF, Government of India has approved Environmental Clearance (EC) for 24 leases in the State for a total annual production of 60.87589 Million Tons. Further, in 34 leases, permitted production of iron ore for which mining plans / schemes are approved so far in the State of Jharkhand is concerned, if EC would be subsequently granted for all the 34 mining leases, then production limit would reach upto 73.26 MT.

Taking this into consideration, if production is made at targeted quantity, iron ore would last only for less than 42 years (i.e.  $3,089.882 \text{ MT} / 73.26 \text{ MT} = 42.17 \text{ years}$ ) in the State which is a very alarming situation. "Hence, in real terms, in the most of the working mines, the quality (+55 grades) iron ore is likely to disappear from the State of Jharkhand." The shah commission submitted its report in four volumes apart from the action taken report and demands in detail to be realised from the wrong doors before the govt. of India.

The report was discussed at length in the parliament. In brief issues of illegal iron ore mining highlighted by the Shah Commission in its voluminous report may be summed up as below :-

Irony of the fact is that no satisfactory punitive action has yet been taken by the Jharkhand government nor effective steps taken to realise proven the demands nor the suggestions of the shah

commission is adopted to improve the work culture of the state machinery as well as to do the needful towards sustainable mining to preserve the natural resources in the form of quality iron ore and manganese and prevent the dangers looming large on conservation of the overall ecology and environment of the pristine Saranda forest, its wildlife and biodiversity.

In this course several other studies like carrying capacity of Saranda, management plan for sustainable mining, integrated wildlife management / development plan etc. were undertaken by the union as well as state government but its recommendations and suggestions are yet to be adopted and executed. The wavering stand of the state government which is supposed to be custodian of the natural resources and public interest as per various articles of the constitution of India is matters of concern for posterity.

## **A PIL IN JHARKHAND HIGH COURT**

The futuristic design of the forces engaged in unabated unscrupulous illegal mining especially in Jharkhand caused deep apprehension about its adverse impact over ecology, environment, biodiversity, wildlife etc. It was a matter of serious concern for the people having rational views towards conservation and preservation of natural resources in course of iron ore mining in Saranda. Voices were loudly raised before the Jharkhand Govt. and the Union Govt. by means of various memoranda backed by solid supportive example of wide ranging illegality in the process of iron ore and maganise mining in dense forest areas in Saranda. Documentry prove rampant vilolation releated provision of mining acts and rules such as MMDR act-1957 and MCR Rules-1960 where time and again placed before the state government but the govt. machinery did not pay heed to it. The state machinery failed to appreciate the voice of well meaning persons in administration and technical institutions and refused to act against vested interests associated with the market forces active in the garb of developmental needs. Our relentless efforts to arouse consciuous of the related departments in the government to work in accordance with inherent spirit of the rule of law in this regard but of no avail. We had no option but to resort to judicial system for issuance of appropriate direction to put lawful checks and balances over the system of governance. I myself consulted legal experts and filed a PIL before the Jharkhand High Court at Ranchi on September 24, 2012. Through an elaborate and exhaustive petition I prayed before the Hon'ble court to issue appropriate writ and directions to the Govt. of Jharkhand to take lawful steps to check the illegal iron ore mining in the State and to do the needful to implement the proposal lying before it since Feb 2006 to phase out economic activities from dense, reserve and protected forests like Saranda and adjoining areas. "I also requested the court to direct the Jharkhand Govt. to notify the list of virgin/ inviolate compartments in the official gazette which was prepared by the department of forest and environment Govt. of Jharkhand and submitted before Jharkhand Govt. in February 2006 and is still pending."My another prayer to the high court was to issue direction to the Govt. of India and Govt. of Jharkhand to cancel the allotment/recommendations for iron ore mining/ prospecting leases in such areas which falls wholly or partially in the virgin areas/inviolate compartment in Saranda and overlap it. Similarly I asked a few reliefs from the court in this regard which are summarised as below :-

1. To direct the Govt. of Jharkhand to cancel/recall the fake

geological reports prepared by the Assistant Director, Geology, Chaibasa regarding iron ore and manganese ore deposits in various areas of West Singhbhum District as it has been prepared to suit the vested interests and are not based on proper geological exploration and supported scientific by investigations or even without visiting such areas.

2. To direct the Govt. of India and the Govt. of Jharkhand to cancel/ withdraw the allotments/ recommendations of iron and manganese ore mining leases /prospects licenses made on the basis of such fake geological reports prepared and submitted by the Assistant Director Geology, Chaibasa.
3. To direct the Govt. of Jharkhand to conduct proper investigation to assess the quantity and quantity of the iron/ manganese ore reserves in Jharkhand.
4. To direct the Govt. of Jharkhand to prepare a scientific perspective plan for sustainable mining of iron ore and manganese ore based on actual requirements of the state and the nation.
5. To direct the Govt. of Jharkhand to take effective steps to protect, conserve, preserve and augments the natural resources such as forest, biodiversity and wildlife etc. in mining areas of Saranda and adjoining forests.
6. To direct the Govt. of Jharkhand to assess the extent of natural wealth, its quality and quantity, its economic value and its role in environmental and ecological conservation in the dense, protected and reserve forest areas.
7. To direct the Govt. of Jharkhand to assess the impact of mining and other subsidiary economic activities on ecology and environment of Saranda and adjoining dense, reserve and protected forests areas.
8. To direct the Govt. of India and Jharkhand to prepare an exhaustive working plan to minimise the threat on ecology and environment in Saranda and adjoining areas and regulate the economic activities such as mining and others.
9. To direct the Govt. of Indian and Jharkhand to get enquired into the illegal allotments/recommendation made for mining/ prospective leases of iron & manganese ore in Saranda and adjoining areas by a competent investigating agency of the Govt. of India.

10. To direct the Govt. of India to fulfill the conditions on which 995 hectares of forest land was diverted to Steel Authority of India for mining in Chiria area of Saranda by the Minister And for this the petitioner shall eve of State, Ministry of Environment & Forests overturning the decision of Forest advisory committee, a statutory body, in 2011.
11. To direct the Govt. of India and the Govt. of Jharkhand to explore possibility of underground mining of iron ore to save the natural resources over ground. After hearing the counsels of the parties be further pleased to pass such order or orders as your lordship may deem fit and proper.

The writ petition on my behalf was filed by the then senior advocate of the Jharkhand High Court Dr. S.N. Pathak who subsequently was elevated as a judge in the same high court and superannuated on Jan 14, 2025. At the outset Dr. Pathak asked me to appear before the court in person to argue the case at admission stage and once the case is admitted he would take up the argument for further hearings.

The matter was listed before the division bench of the chief justice Mr. Prakash Tatia. To the best of my ability I myself argued the case before the division bench and by the grace of God the bench was pleased to admit the case and directed the respondents including government of Jharkhand, union govt and others to file reply of my petition on affidavit. Since then upto the time Dr. Pathak was elevated as Hon'ble Justice of the Jharkhand high court, he ably and sincerely argued the case bringing several positive orders. After that Mr. Diwakar Upadhya, assisting Dr. Pathak as a companion advocate took the mantle to plead the case further on my behalf and he too ably did so upto disposal of the writ petition on 1.7.2025 by the division bench of Jharkhand high court consisting of the Chief Justice Mr. M.S. Ramchandra Rao and Justice Rajesh Shankar.

In course of long hearing of the writ petition by the high Court from September 2012 to March 2025 various judgements were passed by the different division benches of the honourable Jharkhand high court and several counter affidavits and rejoinders were filed on behalf of the respondents and the petitioner respectively.

My writ petition was disposed on the ground that when the Supreme Court of India has passed appropriate order with a

direction to the state government to place a proposal to establish wildlife sanctuary in Saranda in an area of 57,519.41 hectare and a conservation reserve in 13,605 hectares area in Saranda that includes entire virgin areas and inviolate compartments then there is no need that it be heard by this high court.” The order of the high court dated 1.7.2025 in original says that “In view of the order passed by the Supreme Court of India in writ petition (Civil) No. 202 of 1995 on 29th April 2025, this PIL is closed since it also relates to the same subject matter.

The order of the Supreme Court on which the Jharkhand High Court relied while disposing of my PIL W.P. (PIL) No. 5871 of 2012 is cited below as it is :-

1. In pursuance to our order dated 16.04.2025, Shri Abu Bakr Siddiqui, Secretary, Department of Forest, Environment and Climate Change, Government of Jharkhand is personally present in the Court today.
2. This Court, on 07.08.2024, issued notice in this application.
3. Vide order dated 20.11.2024, this Court noticed that the State Government had not followed certain directions issued by the learned National Green Tribunal (NGT) and therefore directed the State Government to file an affidavit.
4. Accordingly, an affidavit was filed by the State Government on 02.12.2024. On perusal of the affidavit, this Court passed an order dated 28.02.2025 noticing that the Principal Chief Conservator of Forest, Wildlife-cum-Chief Wildlife Warden, Jharkhand had already moved a proposal to the Government of Jharkhand for declaration of Saranda Wildlife Sanctuary (SWL) and Sasangdaburu Conservation Reserve (SCR).
5. However, when the matter was listed before this Court on 16.04.2025, this Court perused the subsequent affidavit filed by the State Government, wherein it was stated that the proposal has been received from the Principal Chief Conservator of Forest, Wildlife-cum-Chief Wildlife Warden, Jharkhand on 29.11.2024 and was again sent back by the Department of Forest, Environment and Climate Change, Jharkhand to the Principal Chief Conservator of Forests (HoFF) on 23.03.2025 for his comments.
6. We were, prima facie, of the view that the State Government was unnecessarily delaying the matter by sending files from one

14 authority to another. This Court had expressed that the Court do not appreciate the propriety of sending back of the file again to the Principal Chief Conservator of Forests (HoFF) for reconsideration. We had therefore directed the Secretary, Department of Forest, Environment and Climate Change, Jharkhand to remain personally present in the Court and explain the situation.

7. Today, when the matter is listed Shri Abu Bakr Siddiqui, Secretary, Forest, Environment and Climate Change, Government of Jharkhand, is personally present in the Court.
8. Shri Siddiqui has also tendered unconditional apology in the affidavit.
9. In the affidavit it is stated that now the State Government has proposed to notify an area of 57,519.41 hectares as against the original proposal of 31,468.25 hectares as the Wildlife Sanctuary. It is further stated that an area admeasuring 136.03806 sq. kms. or 13603.806 hectares, has been proposed to be notified as a Conservation Reserve. It is stated that the proposal has now been sent for comments to the Wildlife Institute of India, Dehradun (WII). It is stated that as soon as the comments are received from the WII the proposal would be placed before the State Wildlife Board (SWB) and upon the decision of the SWB, the matter would be placed before the State Cabinet and after the approval by the State Cabinet, the final notification would be issued.
10. We, therefore, request the WII to examine the proposal and forward the proposal along with its comments to the State of Jharkhand within a period of one month from today. The Secretary, Department of Forest, Environment and Climate Change, Jharkhand would communicate this order to the WII. On receipt of the comments from WII, we direct the State of Jharkhand to complete all the formalities within a period of two months thereafter.
11. We accept the apology tendered by Shri Abu Bakr Siddiqui, Secretary, Department of Forest, Environment and Climate Change, Government of Jharkhand and dispense with his presence in the Court.
12. Post the matter for reporting of compliance on 23.07.2025. The final order of the apex court and other details are given in following chapters.

## THE CHIRIA MINES

Chiria is a small village situated at Manoharpur Block of West Singhbhum District in the state of Jharkhand. According to 2011 census, the area of Chiria village was 148.47 ha with 874 households having population of 4178 of which 53% belongs to scheduled tribes, 11% to scheduled castes and 36% of other categories. It is a part of Saranda dense forest and is located within the valley of Ankua Reserve Forest. The in much talked Saranda Forest Division consists of unparalleled dense Sal forests of unique regeneration quality on its surface as well as equally precious and globally acknowledged best quality of haemetite iron ore reserves in its subsurface.

This tiny village came on the mineral map of the world as far back as in 1901 when an imminent geologist Mr. R soubolle reported presence of haematite iron ore in the Singhbhum region of the then Bihar. In the very beginning of the nineteenth century Bengal Iron Company started mining operations at Pansiraburu near the Chiria village. Subsequently, in the year 1936 Indian Iron & Steel Company (IISCO) took over mining operations at Chiria, making it one of the oldest operational iron ore mines in India. The IISCO had six mining leases namely Ajitaburu, Budhaburu alias McLellan, Dhobil, Sukri, Tatiburu and Ankua. This cluster of mines near village Chiria was known as Manoharpur Group of Mines and is commonly known as Chiria mines. The Chiria mine complex covers about 2376 hectares which is about 3% of the entire Saranda forest area. Of this, around 194 hectares (8%) has already been broken up. The table below shows it in detail.

<b>Name of the mines</b>	<b>Area (ha)</b>
Ajitaburu	323.880
Budhaburu	823.967
Dhobil	513.030
Sukri	609.830
Tatiburu	38.866
Ankua	67.178
<b>Total</b>	<b>2376.751</b>

Later on during 1970-72 the Mineral Exploration Corporation Ltd. (MECL). a Govt. of India undertaking conducted a detailed

geological survey of the area and discovered that about ~2 billion tonnes of haemetite iron ore reserve is trapped in the subsurface around Chiria. It brought Chiria into national strategic focus as an India's largest single point iron ore deposit under IISCO. Later in the year 1979 IISCO became subsidiary of SAIL and finally merged with it on February 16, 2006.

At the outset mining in Chiria, specially in Ankua block of Saranda forest division was undertaken through manual method and transportation of thus produced iron ore upto Manoharpur Railway station siding was done by means of light railway. This process of transportation of the raw material has very low, almost negligible, adverse impact on environment and ecology of the area as well as on free movement of scores of wildlife therein. It may be said that mining and transporting activities and natural resources were co-existing within the Ankua Reserve Forest (RF) of Saranda forest division.

Meanwhile the steel authority of India (SAIL) placed a sly proposal before the then Divisional Forest Officer (DFO) of Saranda to discontinue iron ore transportation through light railway and in stead urged to allow surface transportation mode of iron ore through a forest road passing from the dense forest patch of Saranda. Unfortunately, the then DFO of Saranda forest division processed this proposal of SAIL between 1994-96 and without considering its adverse impact over ecology and environment as well as movement activities of wild life especially the elephants of that area. Allowing ore transportation using said road has adversely impacted the movement of elephants from Saranda to Kolhan forest in its north. This in fact was beginning of the catastrophic spell over the fragile serenity of the scenic Saranda endowed with precious gift of nature.

Subsequently it made a move to obtain permission for repairs of said Dhobil- Manoharpur forest road from the Ministry of Environment and Forest, Govt. of India (MoEF) by submitting a misleading disclosure stating that they are having right of way to use it for mineral transportation. The MoEF in turn asked the erstwhile Govt. of Bihar to allow the SAIL to widen this road at their own cost with specific conditions as the department of Forest does not have enough fund to do it. Thus the union govt. granted conditional forest clearance in this regard. Irony of the fact is that the SAIL did not stop here. It brazenly violated the conditions. In nthe name of road repair, SAIL illegally widened the entire length of forest road to facilitate movement of dumpers and other heavy vehicles for its mineral transportation.

In fact SAIL, being a public sector undertaking Navratna company, has a very bad track record in damaging the ecosystem of Saranda. Besides the SAIL had already destroyed prime elephant habitat between Karampada to Chotangara by releasing the effluent into Koina river and caused severe damage to river Karo at Gua due to improper handling of fine dumps.

Further more the SAIL applied for renewal of its mining leases already granted and broken in Chiria mines cluster. Besides it also filed applications for grant of permission to break additional lease areas for mining at Chiria. The table below sums up the scheme of SAIL put forth for grant of renewal as well as fresh lease areas diversion for mining.

The Govt. of Jharkhand recommended and forwarded the above mentioned proposal of SAIL to MoEF for clearance. The Forest Advisory Committee, an Appex expert body, after in-depth study of SAIL's proposal recommended its rejection. The FAC cited the point of view of Wildlife Institute of India (WII) in this regard and pointed out that "earlier the FAC on I 0.10.2008 had recommended the rejection of another proposal for iron and manganese ore mining over 55.79 ha forests area in Kodolibad RF in Saranda Forest Division on account of being part of core zone of Singhbhum Elephant Reserve and critical to wildlife conservation, and is ecologically very sensitive and rich in flora and fauna.

The Wildlife Institute of India (WII) too had observed that opening of this proposed site for mining will lead to disturbances, pollution of the rivers and fragmentation and depletion of forest resources and in this region. Saranda Forest Division is the only un-fragmented forest having dense mixed forests. The increasing pollution in the Koyna river system has not been a matter of concern for wild animal only but also to the people who are largely dependent on this water resources".

Moreover it reminded that another proposal for exploration of iron ore in above 700 ha of forest land in Dhobil Ankua RF was recommended for rejection by the FAC on 27.03.2008 on account of being part of core zone of Singhbhum'i Elephant Reserve and critical to wildlife conservation and that the virgin forestland is very important for wildlife conservation.

The FAC observed that SAIL has already been permitted mining in Duarguiburu iron ore lease over 635.986 ha of forest land (total forest land 1443.756 ha), even though the area was important for the

migration of wild elephants and formed part of the ecologically sensitive core area of Singhbhum Elephant Reserve with the Karo and Koena rivers, the lifeline of people and animals living in the nearby surroundings. The permission was subject to additional conditions of proportionate contribution towards comprehensive wildlife conservation plan to be prepared in consultation with CWLW and WII; to reclaim and rehabilitate the mined out area during the lease period; and to implement the plan prepared by IIT, Kharagpur for reducing water pollution level in Karo & Koena rivers.

The FAC further noted that the SAIL has also been accorded another forest clearance recently over 644.26 ha forest land (total forest area 1936.06 ha) for Kiriburu- Meghahatuburu group of iron ore mines in West Singhbhum district of Jharkhand subject to additional condition that the user agency will explore the possibility of phasing out of mining from Manoharpur group of mines in Chiria area.

Mr. Jairam Ramesh, as a minister of State for environment and forest Govt. of India, over ruled the FAC decision to reject the above mentioned proposal of SAIL for environmental clearance in the interest of SAIL on the ground that it is a Navaratna Company. In brief he opined that "The FAC is a statutory body and I have made no effort whatsoever to interfere in its functioning. On the contrary, I have gone out of my way to ensure that it functions professionally and in an independent manner. I have brought in distinguished experts from outside government as members of the FAC.

He further said that most of the time I have accepted the recommendations of the FAC. But there have been occasions when the FAC has recommended approval and I have exercised my own judgment and rejected that particular case giving clear reasons why I am doing so. An example of this is the Renuka Dam project in HP which the FAC had recommended but that I ended up rejecting on purely ecological grounds. On the other hand, there have been two occasions when FAC has recommended rejection and I have exercised my own judgement and overturned the FAC recommendation-the first being POSCO and the second being the present Chiria case.

He stressed that The FAC will continue to focus single-mindedly on forest-related, biodiversity-related issues and concerns, while as Minister I will have to necessarily take a broader view but placing on public record in a complete manner the reasons for taking that

view. That has always been and will continue to be my approach. This order of Mr. Jairam Ramesh is placed at annexure-3.

This decision of Mr. Jairam Ramesh opened the Pandora box and citing this as an example a few more cases inside Chiria surfaced in which the FAC rejected the environmental clearance proposals for iron ore mining leases but Smt. Jayanti Natrajan, the immediate predecessor of Mr. Jairam Ramesh, too overruled a few rejection recommendations of the FAC and granted permission for allowing mining leases in Chiria and adjoining areas in Saranda to some private players such as JSW, JSWP, Electrosteel and others.

The exhaustive order of Mr. Jairam Ramesh overruling the fact-based order of the FAC and allowing environmental clearance of SAIL's mines and subsequent order of Mrs. Jayanti Natarajan allowing stage-I clearances of a few mines in dense Saranda forest are now kept in abeyance after the specific recommendations of Mining Plan for Sustainable Mining (MPSM) by the expert body team constituted by the Govt. of India surfaced sometimes in year 2016

## INVIOLET COMPARTMENTS

It is not that the Government of India or the Jharkhand government is unaware of the crisis looming large over the reserve and protected forests of Saranda. The Yugantar Bharati experts' team did dig into the files of the forest as well as mines department of the state government and found that the govt. of India warned the State Govt. as back as in the year 2003 regarding the adverse impact of mining and economic activities on the dense and reserve forest like Saranda.

Adverse impact of mining and other economic activities over the ecology and health of the dense forests all over the country has been matter of serious concern over the time. Attention has been drawn towards it from time to time and attempts used to have been done to minimise it in the interest of humane and nature.

A serious attempt came to the fore in 2003 when the then Director General of forests, Government of India made meaningful intervention towards it and as an initial attempt made fair correspondence with the chief secretaries of state governments by asking them to start phasing out of commercial activities from dense reserved and protected forests of the country. In the correspondence made on June 16, 2003 he put forth his views straight and asked the chief secretaries of states in no uncertain terms to gradually start phasing out the economic and commercial activities from the reserved and dense forests.

The then Director General of Forests & Special Secretary, Ministry of Environment & Forest, Government of India Mr. M.K. Sharma wrote a D.O. letter bearing D.O. letter bearing No. 11-28/2002-FC dated June 16, 2003 to the then Chief Secretary, government of Jharkhand, Mr. G Krishnan. In this letter Mr. Sharma says "as you will appreciate that mining in the 'reserved forest' area is totally against the forest conservation and that too for a longer period. In most of the cases, these commercial liabilities have been created prior to the enactment of the Forest (conservation) Act.1980. It has been observed in some cases that mining activities have continued for more than 70-80 years. The continuous mining in the forest area is detrimental to the forest health, existing wild life habitat and the surrounding environment. This must be brought to a halt as early as possible.

"To begin with, the central govt. is not allowing such commercial activities in National Parks, Sanctuaries etc. unless the projects are of National importance having multidimensional socioeconomic benefits. Now there is an urgent need to extend this principle in all

the Reserved Forest and the dense forests as well. For longevity of our precious Forests and for environmental consideration, we should not allow mining in the Reserved Forest and dense Forest area for an indefinite period, Mr. Sharma reminded.

Mr. Sharma further said that it is desired and it is also need of the time that we should initiate steps to phase out such commercial activities from the reserved forests and dense forest areas in a time bound manner. But, considering the principle of natural justice, we should give ample opportunity and sufficient time to various agencies involved in the continued mining operations in the forest areas, a liability created over a period of time to wind up their activities in a phased manner. While doing so, if necessary, we may explore possibilities of gradually shifting to underground mining for which the incentives maybe provided to mining sector.

Mr. Sharma politely asked the chief secretary Govt. of Jharkhand, that may I request you to consider the matter in respect of your state and bring a radical change for betterment of our forests and environment for future generations. Further, you may like to call a meeting of the Department of Mines of your state and various mining lease holders to discuss these matters to gradually shift to total closure of mining in reserve forest and dense forest areas." The copy of Mr. Sharma's letter to the then Chief Secretary of Jharkhand Govt. is given below as it is :-

D.O. No. 11-28/2002-FC

June 16, 2003

Dear

Shri Krishnan,

As you will appreciate that mining in the reserved forest area is totally against the principles of forest conservation and that too for a longer period. In most of the cases, these commercial liabilities have been created prior to the enactment of the Forest (Conservation) Act, 1980. It has been observed in some cases that mining activities have continued for more than 70-80 years. The continued mining in the forest area is detrimental to the forest, existing wildlife, habitat and the surrounding environment this must be brought to a halt as early as possible.

To begin with, the Central Government is not allowing such commercial activities in National Parks, Sanctuaries etc., unless the projects are of national importance having multi-dimensional socio-economic benefits. Now, there is an urgent need to extend this principle to all the Reserved Forests and the dense forests as well. For longevity of our precious forests and for environmental

consideration we should not allow mining in the Reserved Forest and dense forest areas for an indefinite period.

It is desired and it is also need of the time that we should initiate steps to phase out such commercial activities from the reserved forest and dense forest areas in a time bound manner. But considering the principle of natural justice, we should give ample opportunity and sufficient time to various user agencies involved in the continued mining operations in the forests areas, a liability created over a period of time, to wind up their nativities in a phased manner. While doing so, if necessary, we may explore the possibilities of gradually shifting to under-ground mining for which the incentives may be provided to the mining sector.

May I request you to consider the matter in respect of your State and bring a radical change for the betterment of our forests and the environment for future generations. Further, you may like to call a meeting of the Department of Mines of your State and various mining lease holders to discuss these matters and gradually shift to total closure of mining in Reserved Forest and dense forest areas."Yours sincerely

Sd/-  
(M. K. Sharma)

The then chief secretary, government of Jharkhand, marked the above mentioned letter of the DG forests of the union government to the secretary, department of forest and environment as well as to the Principal Chief Conservator of Forests (PCCF). The Chief Secretary asked the Secretary, Forest and Environment to call a high level meeting consisting of officials of forest and mines departments. This communication was marked further downward to the designated regional field officers in the forest department to collect and collate field level informations to help prepare exhaustive reports in this matter and initiate necessary action as per specified guidelines in rules and laws. A state level committee in the chairmanship of Regional Chief Conservator of forests was constituted by the state government to finalise the report.

Before it on February 17, 2005 the PCCF organised a departmental meeting consisting of CCF, RCCF, DFO and CFs. Besides taking decision about modalities of phasing out economic and commercial activities from reserve and dense forests the meeting also considered identification of the areas and locations of the virgin compartments in Saranda and adjoining forest divisions where mining

is not yet initiated. As a follow up measure the secretary, department of Forest & Environment, govt of Jharkhand called a high level meeting on 28 & 29 March 2005 in his chamber in which Director Mines, Principal Chief conservator of forest and other senior officials of forest as well as mine departments were present.

On the basis of deliberations in this meeting an exhaustive list of virgin and compact areas in Saranda forest division were prepared by the forest department and marked as inviolate compartments. The RCCF, Singhbhum, Jamshedpur on 24.10.2005 submitted the list of virgin/ inviolate compartments to the PCCF who after due consideration sent it to the department secretary on 14.2.2006 with a request to facilitate its notification in the official gazette of the state govt. The list of these inviolate compartments thus prepared is given below :-

Sl No.	Name of Compartments	No of Compartments	Total Area (Ha)	No of Inviolate Compartment	Area of " Inviolate " Compartment" (Ha)"
1	Ankua	54	16231.17	38	10983.21
2	Ghatkuri	32	12466.80	17	6025.81
3	Kudlibad	18	4752.22	18	4752.22
4	Karampada	36	11695.54	16	5245.26
5	Samta	49	13224.93	49	13224.93
6	Tholkabad	48	10659.29	47	10332.84
7	Tirilposi	52	12635.62	52	12635.62
	<b>Total</b>	<b>289</b>	<b>89901.57</b>	<b>237</b>	<b>63119.89</b>

When no further progress was seen the PCCF, Jharkhand sent a reminder to the department secretary on 17.7.2007 in which he stressed necessity to notify the designated virgin blocks inside Saranda forest division as inviolate compartments. In a letter to the secretary the PCCF said that an area of 858.82 sq kms comprising entire Saranda division falls under Singhbhum Elephant Reserve notified by the Jharkhand government on sept 28, 2001 for security, safety and free movement of elephants. There are 124 elephants in Saranda as per elephant survey of 2007. There are also some rare species of plants, shrubs, climbers and precious trees in Saranda which needs protection and conservation. He informed the secretary that at present 12% area of Saranda comprising of 9351.07 hectares is under mining operation and broken wholly or partially or at different stages of lease renewal by the public and private sector companies. Besides 85 mining lease applications have been received for mining operations in Saranda forest division which requires nearly 82500 hectares forest land which is almost equal or more than the tarsal

area of Saranda. If these leases are granted Saranda will be extinct and become part of history after some time. Keeping it in view the virgin land where mining has not yet been started must be declared as inviolate compartments. Around 5 to 8 kilometres radius of mining leases area its adverse impact on Elephants movement and habitat of other wild animals besides pollution of rivers and primary water sources is obvious. It has resulted in large scale migration of elephants towards Chhattisgarh. Within the state of Jharkhand in districts such as Bokaro, Dumka, Gumla, Ranchi, Simdega, Lohardaga are facing menace of elephants in the form of human elephants conflict where elephants presence was rare upto 1990.

The PCCF in his communication to the department secretary stressed that at present around three billion metric ton (3000 million tons) iron ore is available in the area under mining leases including those in process of renewal. In Chiria alone iron ore reserve is estimated somewhere near two billion (2000 million) tons. This reserve may last for near about 100 years even if 25 to 30 million metric ton steel per annum is produced in our state and country. He urged the department secretary to do the needful so that around 63,199.89 hectares virgin area gets notified as inviolate compartment by the state government in the larger interest of biodiversity, wildlife and environment protection.

The secretary, department of forest and environment, Govt. of Jharkhand after getting concurrence of the then Minister forest and Environment prepared a proposal to declare the proposed area of Saranda forest division as inviolate compartments and sent it to the state government through the chief secretary for its notification then and there but the matter is still pending with the state government and has become prey to the vested interests in mines and industry departments in connivance with the mining lobby in the country."I myself raised the issue in Jharkhand assembly.

It is unfortunate that the state government has not till now issued gazette notification to save the pristine forest of Saranda from the onslaught of mining & related economic activities. In between, the Department of Mines, Government of Jharkhand has granted mining leases to several companies and mining lease applications of many more companies are in advance stage of granting leases in Saranda area, overlapping many inviolate compartments which will be detrimental to the overall environment and ecology of the region

# **WILDLIFE SANCTUARY AT SARANDA**

## **Historical perspective**

The dense forest area of the Saranda forest division is fast emerging as a zone of conflict between the forces in favour of extensive mining in the name of development and the conservationists in favour of intensive mining as well as protection of its rich biodiversity in the form of precious gift of nature. The Saranda forest division consists of unique Sal forest on the surface termed as green steel and side by side rich and rare stock of the best quality of hematite iron ore and mangnize under subsurface termed as grey steel. "Since the time mining of iron ore in Saranda began with a view to produce various shades of iron and steel this conflict came to the fore front and process of resolution of the conflict too began side by side.

A well thought step to resolve this conflict in larger public interest the then govt. of erstwhile Bihar as back as in 1968 decided to notify an area of about 314.6825 square kilometer of Saranda as a game sanctuary vide notification no. 1168 F dated 16th February 1968. This notification finds place in working plan 1975-76 to 1995-96 of Saranda also but the notification later on was kept in abeyance for long time and is now lost from the state government files. The result is that unplanned and unmindful iron ore extraction continued which took alarming proportion in initial years of the present century. It seemed entire mining industry is bent upon to extract every ounce of iron ore beneath Saranda subsurface and an unscrupulous rat race competition began to acquire mining leases on every inch of Saranda.

In historical perspective emphasis on conservation of wildlife in the Saranda forest division can be traced from 1936 when Mr. H.F. Mooney, then working plan officer for Bihar and Orissa, who prepared the working plan for Saranda forest for the period of 1936-37 to 1955-56, provided detail features of Karampada Plateau under the Saranda forest division. He specifically mentioned that a portion comprising compartments 31-36 of Karampada Reserve Forest Block spread over 4830 acres (1954.63 ha) would make a fine sanctuary dedicated to the preservation of fauna and flora of this interesting area."

Another working plan officer Mr. J N Sinha for Southern circle who prepared Saranda working plan for the period 1956-57 to 1975-76 mentioned that "the Sasangda plateau which is part of Karampada Reserve Forests at present maintained as a sanctuary and should continue. He also recommended formation of another sanctuary consisting of Gundijorn abandoned village site in compartment

number 15-16 of Tholkabad Reserve Forest at the centre of Saranda. The Sasangda plateau is in fact a subset of Karampada plateau under Karampada Reserve Forest Block currently under administrative control of Sasangda Range of the Saranda forest division.

Besides the Saranda working plan for 1975-76 to 1995-96 prepared by Mr. K.S. Rajhans clearly mentions about existence of Sasangda Game Sanctuary spread over an area 31,468 ha (314.6825 square kilometre) which was notified on February 16, 1968 by the then government of Bihar vide notification no. 1168. This working plan also indicates that Sasangda game sanctuary is badly disturbed after opening of Kiriburu iron ore mining project in 1964 and opening of Meghahatuburu iron ore mine in 1982 would further accelerate disturbances before habitat of wild animals.

Later in 2001 on September 26 vide Letter no. Vanyaprani-33/3640 the government of newly born state of Jharkhand declared "Singhbhum Elephant Reserve" comprising of entire area of Saranda Forest Division as its core zone. As a glaring example of rich biodiversity of this region the recent study conducted by the Wildlife Institute of India (WII) catalogued 79 plant species from 40 families, 23 mammals (12 of which fall under Schedule - of the Wildlife Protection Act), 138 bird species, 27 reptiles and amphibians, and 32 butterfly species. Noteworthy inhabitants amongst include Mouse Deer, Sal Forest Tortoise, Chousingha, and the Palecapped Pigeon. The forest region also serves as a vital wildlife corridor between Jharkhand and Odisha. Irony of the fact is that inspite of having such a rich biodiversity, none of the forest officer posted in Saranda forest division since 1980 took pains to do the needful to protect the sanctity of the Game Sanctuary under Saranda which finds mention in the previous working plans of Saranda despite clear deemed sanctuary provision in section 66 of the Wildlife (Protection) Act, 1972. Though on May 26, 1988 an attached officer wrote a letter to the then Saranda DFO for notification of Saranda Game Sanctuary under this Act but no further records are available to track the further action taken in this regard.

Further one wildlife expert Dr. Rakesh Kumar Singh, credited to take up the matter with Jharkhand government to provide deemed sanctuary status of previously notified Sasangda Game Sanctuary in accordance with relevant provisions of the Wild Life (Protection) Act, 1972. When his request was unheard he filed a petition under Right to Information Act, 2005 and requested the state forest department to provide a copy of the notification issued by the erstwhile Government of Bihar in 1968 with regard to Saranda Game Sanctuary. In response to his RTI application, a peculiar reply came from the forest department of state that the department does not have the copy of the said notification and is unable to trace where it got lost.

## **CARRYING CAPACITY OF SARANDA**

On November 22, 2010, the Department of Mines, Government of India, had constituted an enquiry committee under the chairmanship of Justice MB Shah to look into illegal iron ore mining in the country. "In response of the enquiry committee's report, the then-Union Ministry of Environment and Forest constituted a multi-disciplinary expert committee to assess the carrying capacity of the Saranda forest division in Jharkhand.

This committee, known as the Bisht Committee, submitted a report on illegal mining in Jharkhand, whereby, significant issues pertaining to the effect of mining on the ecology and environment of Saranda forest were raised.

In 2016, a study was conducted by the Indian Council of Forest Research and Training (ICFRE), Dehradun, in association with the Wildlife Institute of India (WII), Dehradun. WII's individual report clearly mentioned that the Koina, Sasangda and Samta ranges in the Saranda forest division had high biodiversity vis-à-vis diversity of mammals, birds, amphibians and butterflies.

It was found to be high due to low intensity of mining in the ranges. Whereas, the Gua range, spread across the Saranda forest division and Noamundi range in the Chaibasa forest division had low density of wild species and floral diversity due to high mining activities. "The effect of mining on biodiversity was clearly observed up to 5 kilometres from the active mine boundary. According to the report, any mining activities in the future might completely block the movement of elephants through the Saranda area because all the active corridors had either been blocked or were being diverted towards mining.

Further, a total of three 'hotspots' were identified in the Saranda division for their high conservation value. The Saranda forest is a potential wildlife habitat and has sufficient plants and prey base to sustain both, herbivores and carnivores.

In its final report, the WII also recommended to the expert committee to provide legal status to the Saranda forest.

The ICFRE's concluding report to the expert committee also raised concerns about the management of wildlife in the forest. The committee observed that Saranda was one of the finest elephant habitats in India and hence, capping further iron mining in it must be considered.

It was further observed by Justice MB Shah that the Right to Life was fundamental under Article 21 of the Constitution of India and included the right to pollution-free water and air. The protection of this right was directly linked with clean environment.

It was thus the duty of the state and citizens to improve the natural environment, including forests, lakes, rivers and wildlife, and to have compassion for living creatures. This would require wildlife habitats to remain undisturbed and rivers, lakes, water and air to be unpolluted.

The Bisht Committee examined all aspects of biodiversity conservation in tune with the concerns of the Shah Commission. "It identified critical wildlife habitats, corridors linking them and other important areas in Saranda which need to be protected and conserved for posterity, may be considered as inviolate for iron ore mining and maybe notified as conservation reserves or ecologically sensitive areas in accordance with the provisions of the Wildlife (Protection) Act, 1972 and the Environment (Protection) 1986.

Based on the report submitted by WII and ICFRE to the Union Ministry of Environment, Forest and Climate Change, the Supreme Court cancelled all the mining leases in the Saranda forest in 2016. It was considered a historic decision taken by the Supreme Court to save Saranda.

But as they say, happiness is fleeting. Recently, the government of Jharkhand requested the Centre to carry out a reassessment study on the carrying capacity of Saranda and Chaibasa forest divisions. "The state government is planning to convert 46,000 hectares of the Saranda forest to mines.

The ICFRE Dehradun, IIT Kanpur and IIM Dhanbad have again been selected to research and assess the effects of mining on biodiversity and this time, WII has not been included. In the previous report, WII recommended no new mining lease in the Saranda forest and the Centre accepted it.

A matter of concern The proposed 46,000 hectares of forest diversion will completely destroy everything, especially if such diversions take place mainly in the Koina and Sasangda range of Saranda forest because of their high biodiversity value. "The Noamundi and Gua ranges have a large number of working mines and a further extension of existing mining boundaries within a permissible limit is acceptable. This was also suggested by the report

but the diversion of huge virgin forest should not be permitted at any cost.

If the government is in the final phase of re-assessment then we suggest that it include WII, Dehradun, which has expertise in wildlife and its related aspects. The panel lacks proficiency in this field.

Moreover, WII has surveyed this area and has studied the impact of mining on biodiversity. It would be better if the task of wildlife assessment is allotted to it. The above mentioned report by the WII, ICFRE and the expert panel clearly articulated the Saranda scenario and its importance.

We hope that future reassessment would not compromise on anything and would be able to paint a true picture of the impact of mining on wildlife flora and fauna and the carrying capacity of the Saranda forest.

If the future report suggests keeping secure the sanctity of this area, policy makers would be in a position to provide legal protection to this forest and that would be justice in the real sense to these hapless creatures.

## Annexure - I

### SARANDA DECLARATION

The save Saranda Campaign under the aegis of Yugantar Bharati held two days conclave at Shri Krishna Chitra Mandir auditorium, Manaharpur in Saranda on 22 and 23 May 2014. The Saranda declaration was unanimously adopted at Manoharpur conclave which is summarised as below :-

1. State should constitute an study for intensive documentation of biodiversity to identify rich biodiversity area falling within Saranda, Porahat, Kolhan, Chaibasa forest department and declare them as Wildlife Sanctuary or National Park under the provision of the Wildlife (Protection) Act, 1972.
2. Forest department should immediately identify all the perennial water sources within Saranda and Kolhan FD and assess its seasonal discharge. Reference needs to be taken from old compartment history to document historical perennial water sources. Restoration of river Koina and karo along with its feeding channel should be undertaken at earliest.
3. State should immediate constitute a committee comprising of members from forest department, people representative, state pollution control board, mining department, administration and wildlife expert who are well versed with Saranda region to review the compliance status of forest and environmental clearance conditions and suggest the state government for corrective measure and actions against the violators.
4. All the Forest and Environmental clearance conditions and their compliance should be made available in public domain. A public watchdog system should be institutionalizing to prevent corruption and irregularities in mining operations.
5. State should ensure for effective participation of local people and stakeholders in forest and environmental clearance process.
6. Mining permission should be given to only those corporate who are having Integrated Captive Steel Plants in the state and having capacity to undertake scientific mining. All the trading mines should be closed down with immediate effect.
7. All the mining leases in Saranda should be re-evaluated to realignment the lease boundary so that scientific mining could

be undertaken to complete recovery of minerals within particular lease.

8. Mining should be permitted only in Ghatkuri and Karmapada reserved forest block only of Saranda in such way so that wider connectivity can be maintained for forest falling in Chaibasa & Kolhan forest division of Jharkhand and Kenonjhar and Bonai forest of Orissa. All the mining leases given in Ankua & Kodlibad reserve forest should be cancelled immediately to prevent fragmentation and degradation of prime elephant habitat.
9. Road transportation of mineral should be phased out with closed conveyer system. Till the conveyer system developed the number of trips for mineral transportation should be reduced to maximum 300 dumpers per day.
10. State should assess the potential of MFP and institutionalize the MFP collection and their marketing for livelihood of locals. Annuity should be given to locals whose forest area is going / gone for mining purpose to compensate their MFP and their livelihood issue.
11. All the existing mining company should under Corporate Social Responsibility work in public consultation and focus on education, health and livelihood issue of locals.

**Annexure - II**  
**DIRECTOR GENERAL OF FORESTS & SPL. SECY.**  
**“GOVERNMENT OF INDIA”**  
**MINISTRY OF ENVIRONMENT & FORESTS**

D.O. No. 11-28/2002-FC

June 16, 2003

Dear Shri Krishnan,

As your will appreciate that mining in the reserved forest area is totally against the principles of forest conservation and that too for a longer period. In most of the cases, these commercial liabilities have been created prior to the enactment of the Forest (Conservation) Act, 1980. It has been observed in some cases that mining activities have continued for more than 70-80 years. The continued mining in the forest area is detrimental in the forest, existing wildlife, habitat and the surrounding environment this must be brought to a halt as early as possible.

To begin with, the Central Government is not allowing such commercial activities in National Parks, Sanctuaries etc., unless the projects are of national importance having multi-dimensional socio-economic benefits. Now, there is an urgent need to extend this principle to all the Reserved Forests and the dense forests as well. For longevity of our precious forests and for environmental consideration we should not allow mining in the Reserved Forest and dense forest areas for an indefinite period.

It is desired and it is also need of the time that we should initiate steps to phase out such commercial activities from the reserved forest and dense forest areas in a time bound manner. But considering the principle of natural justice, we should give ample opportunity and sufficient time to various user agencies involved in the continued mining operations in the forests areas, a liability created over a period of time, to wind up their nativities in a phased manner. While doing so, if necessary, we may explore the possibilities of gradually shifting to under-ground mining for which the incentives may be provided to the mining sector.

May I request you to consider the matter in respect of your State and bring a radical change for the betterment of our forests and the environment for future generations. Further, you may like to call a meeting of the Department of Mines of your State and various mining lease holders to discuss these matters and gradually shift to total closure of mining in Reserved Forest and dense forest areas.

Yours sincerely

Sd/-

(M. K. Sharma)

## **Annexure - III**

# **Ministry of Environment and Forests**

## **“GOVERNMENT OF INDIA**

**Subject : Forest Clearance for SAIL’s Chiria Iron Ore Mines”**

### **I. Background**

1. The erstwhile privately-owned Indian Iron and Steel Company (IISCO) took control of the Chiria iron ore mine complex in the Saranda forest in Paschimi Singhbhum district of Jharkhand in 1936. IISCO became a fully-owned subsidiary of SAIL in 1978 and final merger took place in 2006 on the premise that the mines would be made available to SAIL since it had been forced to absorb substantial losses on IISCO’s account.

2. The Chiria mine complex covers about 2376 hectares which is about 3% of the entire Saranda forest area. Of this, around 194 hectares (8%) has already been broken up. SAIL’s proposal that has come to MoE&F for forest clearance (environmental clearances have already been obtained) comprises two components: (i) renewal of permission to mine in the 194 hectares already broken up; and (ii) permission to divert an additional 401 hectares (17%) for mining. Thus, permission is being sought for diversion of a total 595 hectares which is 25% of the total Chiria mine area. The permission is being sought for a period of 20 years.

### **II. Factors Weighing in the Decision**

3. While deciding to accord approval for SAIL’s proposal, I have kept the following factors in mind.

SAIL is a "maharatna" public sector company with a good track record of corporate social responsibility and as such deserving of special treatment even in this era of a certain economic orthodoxy.

SAIL has aRs 18,000 crore IPO on the anvil, 50% of whose proceeds will accrue to the Government of India. Thus, an early decision has to be taken without waiting for "perfect" information.

The Honourable Prime Minister had written to the Chief Minister of Jharkhand in August 2007 requesting for renewal of mining leases in Chiria in favour of SAIL in the broader national interest.

Forest clearances had been given to SAIL earlier in July 1998 and October 1998 for two leases in Chiria itself.

Chiria is essential for the future of SAIL. Over the next 50 years, around 40% of the iron ore requirement of SAIL will be met from the Chiria mines. Quite apart from this, this is the only compact deposit available to SAIL.

Giving permission only for renewal would be grossly insufficient for SAIL's raw material requirements. Moreover, mechanisation would not be possible in the leases under consideration for renewal and they would deplete by the year 2020.

The existing steel plants Bokaro, Burnpur, Durgapur and Rourkela will necessarily have to be run from iron ore coming from Chiria once the mines presently feeding them are depleted in 10-12 years time.

Chiria is in a left-wing extremist affected region with a substantial tribal population. CSR activities by SAIL could help in the socio-economic development of this region, particularly as far as the Ho tribal communities are concerned.

There is also an urgency to accord approval given the long lead times involved in starting production in an area that is not easy to work in because of various factors.

### **III. Specific Conditions Governing the Decision**

4. While the approval is being given subject to the usual conditions governing forest clearance (like those relating to compensatory afforestation<sup>1</sup> and Net Present Value) there are 13 specific conditions that are being stipulated for this approval. These are :

Only mining and primary and secondary crushing would take place in the forest area. Processing, beneficiation, blending, stockpiling, railway sidings, infrastructure and all township facilities will be 15km away in non-forest land. Only conveyor systems will be used for transportation of ore.

A cluster management approach will be adopted for mining-related activities to avoid excessive fragmentation. Thus, the diverted area will be broken up in phases.

There has been a demand from the Jharkhand government that degraded forest land should be used for compensatory afforestation because of the great difficulty in finding other government-owned land. I find much merit in this demand

and a beginning will be made with SAIL in this project.

The forest areas above their water collection points should be kept inviolate.

Forest roads will not be used by SAIL during night time.

SAIL will position a wildlife management team at Chiria from the start of operations to monitor impacts and take remedial measures as the project proceeds.“?

Over the next 20 years only 25% of the total forest area being diverted (equivalent to around 595 hectares) will be broken up.

SAIL will make a contribution of Rs 20 crore over the next five years for programmes relating to wildlife-related and biodiversity-related programmes in the region with particular focus on the Saranda Forest Division.

In keeping with the guidelines issued by the Department of Public Enterprises, SAIL will earmark at least 2% of net profits for CSR activities (as distinct from wildlife and biodiversity management programmes). The CSR will include vocational and skill-development programmes for local youth to begin as the mining activities commence. Employment of local tribal youth will be maximised in a transparent manner.

Proper mitigative measures to minimise soil erosion and choking of streams will be undertaken.

There will be zero discharge into the Koena River and steps will be taken to ensure that the river does not get polluted. This will be subject to regular field reviews by the Central Pollution Control Board (CPCB). The river ecology is critical to the health of the forest.

The entire mine lease covering 2376 hectares will remain with SAIL as at present. Five-year plans should be prepared for land-use and the fellings will be regulated accordingly.

SAIL will support the preparation of a comprehensive wildlife and biodiversity management plan by the Wildlife Institute of India, the Wildlife Trust of India and the WWF. This study will also identify areas that should be kept inviolate in the Saranda forest. This study should be commissioned immediately.

Given that in recent months, it has been permitted mining in ecologically sensitive areas (in Duarguiburu as well as

in Kiriburu-Meghahatuburu), SAIL should set up a full-fledged forest management team under a full-time Executive Director whose sole responsibility will be forest management.

5. Given the ecological sensitivity of the Saranda forest area, the MoE&F will assume direct responsibility and set up a multi-disciplinary expert group (that would include not only ecologists but also anthropologists) to be responsible for this monitoring. The monitoring, evaluation and compliance reports will be made available in the public domain once a quarter. This committee will pay special attention to the concerns relating to the impact of mining on elephant habitats and migratory routes.

#### **IV. A Final Word**

6. The FAC is a statutory body and I have made no effort whatsoever to interfere in its functioning. On the contrary, I have gone out of my way to ensure that it functions professionally and in an independent manner. I have brought in distinguished experts from outside government as members of the FAC.
7. Most of the time I have accepted the recommendations of the FAC. But there have been occasions when the FAC has recommended approval and I have exercised my own judgment and rejected that particular case giving clear reasons why I am doing so. An example of this is the Renuka Dam project in HP which the FAC had recommended but that I ended up rejecting on purely ecological grounds. On the other hand, there have been two occasions when FAC has recommended rejection and I have exercised my own judgement and overturned the FAC recommendation-the first being POSCO and the second being the present Chiria case.
8. The FAC will continue to focus single-mindedly on forest-related, biodiversity-related issues and concerns, while as Minister I will have to necessarily to take a broader view but placing on public record in a complete manner the reasons for taking that view. That has always been and will continue to be my approach.“

sd/-  
(Jairam Ramesh)  
MOS(I/C)E&F  
9/2/1

### Annexure - iv

#### State-wise details of available Iron ore resources

State	Resources of iron Ore(in thousand tonnes) (as on 1.4.2010)	
	Haematite	Magnetite
Andhra Pradesh	381,478	1,463,541
Assam	12,600	15380
Bihar	55	2659
Chhattisgarh	3,291,824	-
Goa	927,172	222,673
Jharkhand	4,596,620	10,541
Karnataka	2,158,678	7,801,744
Kerala	-	83,435
Madhya Pradesh	231,446	-
Maharashtra	283,209	1361

### Annexure - v

State	Resources of iron Ore(in thousand tonnes) (as on 1.4.2010)	
	Haematite	Magnetite
Meghalaya	225	3,380
Nagaland	-	5,280
Odisha	5,930,232	199
Rajasthan	30,560	526831
Uttar Pradesh	38,000	-
Tamilnadu	-	507037
Total	17,882,098	10644060

**Annexure - vi**

**State wise production of iron ore (quantity and value) in last three years and domestic consumption of iron ore**

States	2008-09			2009-10			2010-11(P)		
	Production	value	Domestic Consumption	Production	value	Domestic Consumption	Production	value	Domestic Consumption
ANDHRA PRADESH	10112	15211659	4956	6246	8101303	3393	1435	422293	537
CHHATTISGARH	29997	59064269	25631	26211	44227248	24115	29146	82675755	23869
GOA	31195	48609019	7553	38136	55846319	8826	36723	74085391	6522
JHARK HAND	21329	9246556	13912	22547	11242048	14286	23174	16393379	11602
KARNATAKA	46971	57305574	25941	43163	48811665	27049	37878	62114924	31022
MADHYA PRADESH	412	101332	570	1058	359750	1016	1745	789840	1029
MAHARASHTRA	294	236085	215	283	221777	341	1520	1231774	1086
ORISSA	72627	95665250	47422	80896	95807348	51784	76350	137623681	51122
RAJASTHAN	23	4276	23	13	2594	13	27	6392	26
TOTAL	212960	285444020	126223	218553	264620052	130822	207998	375343429	126814

Quantity of production and domestic consumption in thousand tonnes /Value in 'thousand Rs (P): Provisional,  
(Source: MCDR returns)





**A Glimpse of  
Saranda Forest**