CHAPTER II

SITUATION IN ORISSA

Introduction

The mineral bearing areas in the country have been subject to mining for a long period of time. The mining activity in many areas has been the mainstay of local economy. With time the nature of extraction has changed. The increasing demand for large quantities as well as different kinds of minerals encourage a system dependent on high rates of production. A direct fallout of such a process being faster depletion of resources, there is always a search on for comparatively unexplored terrain. Intensive mining taking place in India, at least in the last fifty years, has had its share in the degradation of local environment, land, water sources, forest, etc. Further the economics and politics of the process has acted to reduce the control of local inhabitants on their resource base.

The frequency of mega-projects related to mineral resources, in the country today are seen as direct fallout of the economic reforms undertaken by the government under the structural adjustment programmes. The State Governments of Orissa and Rajasthan have signed MOUs with private investors both foreign and indigenous in areas like Gold, Diamond, precious stones, base metal explorations and mining. Large private investment in iron ore and Bauxite. With the planned de-regularization by Coal by the 9th plan, the entry of private sector into Coal mining will be eased and the projects envisaging the provision of captive Coal mines to independent power producers are likely to materialize.

The State of Orissa with its high reserves of a variety of mineral resources likely to occupy the centre stage of mining industry in the coming years. In addition to the existing deposits much of which is yet to be exploited, there are immense potential for successful exploration work for fresh reserves. This coupled with a dense forest cover in many places and ample surface and ground water sources provides an extremely lucrative deal for mining industries. What makes things simpler is the prevailing political climate of the state, geared for rapid industrial growth in keeping with the now liberalized Indian economy. That the State of Orissa maintains that the key to their economic development lie in their mineral resource base is apparent from the contents of their industrial policy document published this year.

A. Analysis for Orissa's Industrial Policy, 1995-96

- Section 1.2 of Orissa's IP-96 mention some of the mega development project the offing. All of these are mineral based industries and include 13 steel plants, six large power projects, 3 alumina/alumina projects and two green-field oil refineries.

- Section 2 is about the objectives and strategies, which reiterate frequently as to the need for accelerated industrial growth by facilitating large investment in resource based like power, steel, aluminum, etc.

- Section 3 is devoted almost entirely to infrastructure development. Part 3.2 talks about existing and expected proposals for large Hyde and Thermal power projects from large Indian and Multinational industrial houses. To attract more investment the policy contemplates provision of land and water at industrial rates (read confessional), electricity duty exemption for power plants.

- Part 3.3 talks about the rail routes that have been sanctioned. It is amazing that all of them are geared towards providing easy access to the high mineral deposit areas.

- Part 3.5 is about port development.

- Section 5 titled "Thrust Areas" talk almost exclusively about mineral based industries. The major emphasis are on sophisticated exploration/investigation techniques for locating mineral sources with the collaboration of international companies, joint ventures between the Orissa Mining Corporation and large private sector bodies, Indian and multinational on mining and processing projects. Power purchase agreements with independent power producers (IPP).

Orrisa's latest Industrial Policy echoes the dominant economic sentiments prevailing over all over the country. Irrespective of whether it comes to fruit, the implications are critical. As far as the government is concerned. Orissa's panacea seems to lie in the rapid development of its vast resource base. This primarily includes the available and unexplored mineral reserves. The key to development seems to be with the private investors. Not surprisingly the state is bending over backwards to create an environment that would be conductive to large private capital investment.

To ease the entry of the private sector, the government both the central and the state have amended and modified the existing provisions under the various mining legislation. Attracting investment by providing concessions like cheap power, water, land, etc. is part of a standard procedure. The port development programmes, massive, both in terms of cost and magnitude, along the eastern coast is a direct incentive for export-oriented production. To meet the power

requirements of the large industries and attendant urban congregations, independent power producers are being wooed. The carrot offered, the forthcoming de-regularization of coal sector coupled with the large reserves of power grade coal in Orissa.

If one wonders at the state's sudden concern for the so-called remote or backward areas looking at the sudden spurt in construction of railroads, just note where they are going. Most rail routes now on the anvil are with the aim of connecting the major mineral reserve areas with important towns and ports. The contents of Orissa's IP-96 is indicative of the single-minded pursuit of external capital. The costs are never discussed. The probable gains are highlighted, the tangible losses incurred are glossed over. It is not difficult to predict the outcome of such a policy. It has been proved time and again-the consequences of unbridled economic growth in a society where power and resources are so unequally distributed. Marginalisation of a large section of the population is inevitable.

B. Contextualising the Mineral Industry in Orissa

1. Sector wise Plan Outlay/Expenditure of Orissa

If we compare the state government's allocations under given heads in the 6th and the 8th plan, we see that the rate of increase has been the highest for industry and minerals. For Orissa mineral based industries seem to be the priority sector.

(Rs. in crores)

Sector	**6th Plan (80-85)**	**8th Plan (92-97)**	**Percentage increase**
Industry & Minerals	103.9	785.7	656%
Social service	214.3	1543.8	620%
Irrigation & flood control	453.9	3079.2	578%
Power & energy	400.5	2644.7	560%
Agriculture & allied services	106.8	619.2	480%
Transport & communication	112.1	592.9	429%
Rural Development	136	405.3	198%

Source Govt. of Orissa, 1995

2. District wise Forest Cover, Orissa, 1990

The State of Orissa has a high forest cover. It we look at the undivided district figures, some areas have nearly 60% forest cover. The forests hold the major portion of the State's mineral reserve. They are also inhabited by indigenous people. The areas presently under intensive mining for coat, iron, ore, bauxite and other minerals are either situated in forest areas or what were the forests a few decades back. The forthcoming mining ventures would take care of the remaining forests.

District (undivided)	Forest area in Sq. Km.	Percentage of Geographical Area
Koraput	8866.7	32.9%
Ganjam	7032.88	56.12%
Sambhalpur	6201.13	36.40%
Kalahandi	5653.59	48.02%
Phulbani	5651.1	50.82%
Dhenkanal	5342.49	49.34%
Mayurbhanj	5253.36	50.46%
Sundergarh	3989.07	41.07%
Keonjhar	2494.35	30.03%
Cuttack	1717.1	15.41%
Bolangir	1437.01	16.12%

Source: The office of Principal Conservator of Forest, 1994

3. Estimated mineral reserves of Orissa, 1994-95

Mineral Ore	Reserves in Million Tonnes	Percentage of India's Reserves
Coal	46527	23%
Iron Ore	3120	26%
Bauxite	1670	70%
Limestone	1212	----
Dolomite	1171	----
Nickel Ore	285	----
Chromite	183	98%
China Clay	157	----
Fire Clay	108	----
Mineral Sands	82	----
Manganese Ore	49	----
Quartz/Silica	15	----
Cooper Ore	4.7	----
Vanadium Ore	3.4	----
Lead & Zinc	2.6	----
Graphite	1.5	38%
Soap Stone	0.1	----

Besides the above Orissa have deposits of mineral ores like, Asbestos, Gemstone, Gold, Kyanite, Diamond, Tin, etc. An estimate of these reserves has not been obtained. Major expansions are underway in the areas with Coal, Iron, Ore, Bauxite deposits. Intensive explorations are being planned for Gold, Diamond, Petroleum and Atomic minerals.

4. Locating Mineral Reserves in Orissa

A number of prominent metallogenic belt pass through Orissa determining the location of its mineral deposits. Detailed identification of these areas is required primarily to keep track of rapidly intensifying mining activities.

Bauxite: The East coast bauxite belt passes through the southern district of Orissa and proceeds up till the western districts. The bulk of bauxite deposits are thus found in the districts of Koraput, Rayagada, Bolangir, Bargarh and Kalahandi.

Chromite: The total chormite deposits of the state are shared between the three districts of Jaipur, Keonjhar and Dhenkanal. Among these Sukinda valley of Jaipur district holds the maximum deposits followed by the Nausahi area of Keonjhar district.

Coal: The coal reserves in Orissa are concentrated around Talcher and IB valley areas. These regions primarily come within the districts of Anugul and Jharsuguda. The coal reserves extend up to western edge of Sundergarh district bordering Madhya Pradesh.

Dolomite: Dolomite reserves are mainly concentrated in Sundergarh district. Small deposits are also available in the districts of Koraput and Bargarh.

Graphite: The graphite reserves of Orissa are concentrated in the western districts of Bargarh, Bolangir and Nuapada.

Iron Ore: Extensive reserves of iron ore are located in Banspani, Joda, Badbil, Bolani, Thakurani areas of Keonjhar district and Barsuan-Kalta, Khandadhar-Baliapahar areas of Sundergarh districts. Fairly large deposits are also available in the Daitari-Tamka areas bordering Jaipur-Koenjhar districts, Gorumahisani, Badampahar areas of Mayurbhanj district and Gandhamardan, Malangholi areas of Bolangir district.

Lead Ore: The only lead-Zinc mine in the state is located at Sargipali in Sundergarh district.

Limestone: Limestone deposits in the state are located primarily in the district of Sundergarh. Some deposits are found in the districts of Koraput and Bargarh.

Manganese: Manganese deposits occur in similar locations as iron ore primarily in the districts of Keonjhar and Sundergarh. In many cases iron and Manganese ores are found in combination.

5. District Wise Distribution of Mining Leases, Orissa

In 1994-95 Orissa had 579 mining leases working in an area 113841 ha in terms of the total area under lease, the districts of Sundergarh and Keonjhar would appear to be heavily mined. Mining in this area is for Iron ore and Manganese and Limestone, basic ingredients for the steel industry. In many of the places here mining is at least hundred years old. The dense forests in this region and the high percentage of tribal population are the biggest losers in the game.

The smaller districts of Anugul and Jharsuguda are under intensive coal mining. The two major coalfields Talcher and IB valley are located here. The coalfields are worked by the Mahanadi coalfield limited a CIL subsidiary wholly owned by the State. Before the nationalization of the coal sector in the early seventies some of the coalmines were privately owned. These collieries are among the oldest mines in the State.

Cuttack and Jaipur districts are among the few non-tribal areas to be mined because the availability of chromite, another raw material for steel making. Under the erstwhile princely state, large tracts with chromite deposits were held by a single private owner M/s. Sirajuddin & Company. The Tata Iron and Steel Company later came to control the major part of that lease. Presently Tisco and four other private firms along with the state owned Orissa Mining Corporation are engaged in a legal tangle over mining rights for the valuable deposits.

The southern districts of Koraput and Rayagada are relatively new entrants in the fray. The high-grade bauxite deposits (bauxite is the ore for Aluminum metal) were first mined by the National Aluminum Company in the early eighties. Their Bauxite mines at Panchpatmali hills in the Koraput district is the one of the most sophisticated in Orissa and the largest in Asia.

District	District area in `00 ha.	Percentage of S.T. Pop.	No. of mining leases	Total area under lease in ha.
Keonjhar	8303	44.51	113	33,542
Sundergarh	9712	50.70	135	25,388
Jharsuguda	2308	35.59	27	10,587
Koraput	8379	50.35	11	8996
Anugul	6347	12.34	18	8626
Jaipur	2884	7.41	14	6590
Mayurbhanj	10,418	57.87	33	5584
Ganjam	8070	3.16	3	2930
Cuttack	3915	3.49	18	2049
Bargarh	5831	16.68	36	1921
Malkangiri	6115	57.67	2	1696
Botangir	6351	22.04	59	1586
Dhenkanal	4597	13.66	4	1113
Rayagada	7584	55.99	12	927

Source: Mineral Statistics of Orissa, 1994

6. Mineral Wise Distribution of Mining Lease in Orissa, 1994-95

Iron ore and Manganese mining leases together make the maximum percentage of area under mines in Orissa. Iron ore, Manganese, Chromite and Limestone are supplied as raw materials to the private and public sector steel industries. Coal, which is mainly power grade, is supplied to the thermal power stations within Orissa and outside.

Mineral	**Total no. of leases**	**Total Area in ha.**
Iron ore	74	19,970
Iron & Manganese ore	61	19,173
Coal	22	16,779
Manganese ore	36	9619
Chromite	17	7631
Bauxite	5	7458
Lead ore	1	500
Iron ore & Bauxite	2	480
Non metallic	361	32,231
Total	**557**	**97,062**

Source: Mineral Statistics of Orissa, 1994

7. Sectoral share in the distribution of mining leases

Till recently, most of the important minerals in the state were mined under public sector companies. The Orissa Mining Corporation held mining leases for iron ore, chromite, manganese, limestone, etc. The Steel Authority of India holds mining rights for iron ore in high value deposit areas. The Hindustan Zinc Limited owns the solitary lead-Zn-Copper mines at Sargipalli. Mining for atomic minerals in the beach sands at Gopalpur in Ganjam district is controlled by the Indian Rare Earths Limited. Bauxite till the early nineties was mined only by the National Aluminum Company. The only private sector company with major leaseholds on important minerals like iron ore has been the Tata Iron and Steel Company. Till recently Tisco had a literal monopoly in the Chromite rich area of Sukinda with a single lease spread over 1260 ha.

Nature of ownership	**Total no. of leases**	**Total area in ha.**
Private sector	491	50,160
Public sector	88	63,681

Source: Mineral Statistics, 1994

The fifty thousand odd hectares under the private sector is in the form of small fragmented leases spread all over the state (with the exception of Tisco). The public sector leases are spread over large areas under high grade deposits.

8. District Wise Mining Revenue Generated, Orissa

District (undivided)	Mining Revenue in Lakh Rs.
Dhenkanal	7027.25
Sambhalpur	3819.32
Cuttack	2343.98
Sundergarh	1259.69
Keonjhar	1223.67
Koraput	907.26
Mayurbhanj	73.11
Ganjam	68.91
Kalahandi	67.16
Phulbani	57.13
Total	**16,969.18**

Source: Mineral Statistic, 1994

The undivided Dhenkanal and Sambalpur districts report highest revenue due to the coal production. Then come the chromite producing areas followed by iron ore yielding districts and then bauxite.

9. Mineral wise collection of Mining Revenue, Orissa

Mineral	Revenue in lakh Rs.
Coal	10,644.39
Chromite	2375.2
Iron ore	872.74
Limestone and Dolomite	783.5
Bauxite	738.98
Graphite	216.92
Limestone	139.91
Manganese ore	67.66
Mineral sands	22.82

Source: Mineral Statistics 1994. In 199-95 Coal was the highest revenue generator.

10. Forest Area released as under Forest Conservation Act (1980) for non-forestry use between 1980-December to 1991-June, in ha.

Total area under forest has dwindled in the last decade. The major mining areas in the state are inside the forests. Before 1980 it was not difficult to get leases inside forest areas. After the forest conservation act was passed, the already leased out areas inside forests were required to be dereserved before the commencement of mining. The area where mining is to take place is clear felled in stages. For each phase of operation surface rights have to be acquired from the forest department. The forest department has to be compensated for the loss according to the laid down stipulations. Similarly required compensation commitments are often

unfulfilled. Therefore in most of the district forest cover is likely to be much lower than what the forest department figures say.

The amount of forestland that has been diverted for other purposes is also much larger than what gets reported. Gross violations in terms of lease boundaries are also very common. So the actual area under mining can be larger than what is reported. Dumping of waste and debries, which is also quite rampant, is also on nearby forestland. This would be over considerably large areas especially in older mines.

Type of Project	**Total No. of Project**	**Area Released in ha.**
Irrigation	39	4906.494
Mining	8	1538.052
Power Lines	13	919.219
Railway Lines	1	901.530
Roads	11	202.726
Others	16	1179.562
Total	**88**	**13,766.163**

Source: Office of the Principal Chief Conservator of Forest, 1994.

Forestland for non-forest purposes is generally released under the following categories:

Category 1): With stipulation for compensatory afforestation over equivalent area etc. Total area released under this category: 12.358.008 ha.

Category 2): With some other stipulation for raising plantation. Total area released under category 2: 987.661 ha.

Category 3): Without any stipulation for compensatory or other planting. Total area released under this category: 387.494 ha.

- Total surface area acquired for mining leases till 1994-95: 45.948 ha.
- Total area under mining leases till 1994-95: 97.062 ha.

11. Land Utilisation Pattern, Orissa

(area in 00 ha.)

Year	**Forest**	**Permanent pasture & other grazing land**	**Cultivable waste land**	**Land put to non-agricultural use**	**Barren & uncultivable land**
`88-89	55830	7260	4440	7230	4500
`90-91	54760	7260	5170	7420	4990
`92-93	54780	6630	5380	7810	5320

Source: Govt. of Orissa, 1994

The State's statistics show that area under forest and permanent grazing land has come down while area under barren wastelands has gone up. This is not to say

that it can all be accounted for by mining activities. But it does play a significant role especially in the districts with concentrated mining activities. Moreover it reflects albeit in an understated manner the trend of change in land use in Orissa with its broader implications.

12. Area under Coarse grains cultivation:

		(area in sq. km.)	
Coarse grain	**1988-89**	**1990-91**	**1992-93**
Jawar	300	270	180
Bajra	70	70	60
Small millets	900	700	720
Total	**1270**	**1040**	**960**

Source: Govt. of Orissa, 1994

The area under coarse grain cultivation has gone down all over the state. The statistics tend to be slightly disguised as government figures are. But the fact that people are growing and consuming less coarse grain is an accepted reality. Coarse grain planted under shifting cultivation generally in tribal areas of Orissa. Lately these have been the places were major projects have come up. There is simply less of land available now for shifting cultivation with the forest areas being appropriated for mining and related activities. And wherever possible paddy is being introduced as the principal crop. Shift from subsistence to monetized economy. Paddy crop is primarily for sale while coarse grains were for immediate family consumption. With the coarse grains, dry land, non-irrigated farming techniques are also disappearing.

C. In the Mining Area

1. The Iron ore belt of Keonjhar and Sundergarh district

Silyalijoda village in Keonjhar district was two hundred kilometers away from Bhubaneshwar, the capital of Orissa. State transport buses take a long time covering the distance. Cuttack and Jaipur towns have to be passed on the way. In between the urban area, there exists every evidence of haphazard industrialization. Numerous factories strategically located along highways and surrounded by paddy land, garages, workshops, shacks, semi urban settlements are clustered around these. There are miles of lush paddy fields and suddenly smoking chimney shaft would appear. Construction work is on everywhere. The highways are crowded with trucks carrying stone chips, cement bags and other building materials.

After the shanties and piles of garbage and open sewage near the towns, there would come a stretch where men and women bent over rice field are a common sight. There were talks about the scanty rains affecting the paddy yield this year.

Bilaipada, in the Joda block of Keonjhar district looks what it is. The veritable backyard of a busy industrial town. Narrow sooty lanes planted by grimy Eucalyptus, tin shacks serving as provision stores, cigarette shops, small eating-houses, posters announcing the latest film released and blaring music.

In north Orissa Sponge Iron plants are a common sight. After crossing Jaipur for every ten km. of paddy land there is one iron factory. The first indication that the iron belt was approaching Bilaipada has a resident sponge iron manufacturing plant. Locals call it "IPITATA". It is jointly owned by the Orissa state government unit, IPICOL and the TATAs. From the highway the fenced in boundary of IPITATA's residential area is visible. It looks like a different world.

To reach Siyalijoda from the highway there is only a dirt road. A six-kilometer stretch punctured with potholes filled with water, brick red in colour. Huge trucks carrying either raw iron ore, coal or stone chips and other construction materials piled back and forth. Jeeps and motorbikes take people to and from their work. There are patch groves of trees, mostly Sal, Kendu, Kadamb, etc. A rail track runs almost parallel with the road and is brilliantly illuminated with high power lights. The railway colony as well as the plant township has electricity, while the villages a few km away don't have electricity, tap water or hand pumps, bore wells, etc.

All around the villages within a distance of a few kilometers there are mine sites which have been in operation for a long time. Some dating back to the last century. Most people in the villages work in the mines or related industries. Agriculture is no longer the primary source of livelihood in the area.

In Siyalijoda village the population though primarily tribal, is a combination of original settlers and south Bihar tribal communities who had migrated in to the area at some point in time. Large-scale mining over a long period of time has opened up the place to a variety of outsiders. The sixty, seventy year olds in the village also talk about the "Tata mines". Large portions of village forests have disappeared in roads, rail tracks and depots, population pressure.

There are numerous small stone quarries in Siyalijoda village. Some of the prosperous villagers run these and employ around thirty local villagers mostly women to break stones and stone chips on a piece rate basis. The stones are in high demand in the nearby areas for laying roads and construction purposes. For the landless and marginal landholders in the village, the available sources of livelihood seems to be in the form of seasonal employment as labourers on agricultural land during the paddy season and wage labour in small privately owned hand mines and quarries. Most villagers seemed to look upon the mining industry as a major source of employment.

Joda town is 15 km away from Bilaipura. Joda block has a number of small and big mines. The most prominent in terms of the total area covered as well as extent of production are the ones owned and managed by the Tata Iron and Steel

Company Limited. Joda is predominantly the TISCO Township. The difference between the Tata colony and the rest of the town has to be seen to be believed. Joda itself is an archetype of a small industrial town. Apart from the well planned and restricted TISCO township with it's playground, staff quarters, parks, clubs, schools and hospitals, the rest of the place consists of congested habitations in rundown and makeshift shacks, shanties, mud huts with tin and earthen tiles, piles of tire, piled up garbage, open sewage and mucky polluted streams serving as bathing and washing sites, squalid shops and broken down, narrow gray – black roads. These were the workers settlement made up of migrants who had come to make a living in Joda.

Tisco's open cast manganese mine at Joda west. Bichamundi was one of the oldest mines in the area. Samvari's mother who is in her sixties has been working in that mine for the last forty years. The mine was semi mechanized now, but considerable amount of work was still done manually. Being a holiday, the place was deserted, only the guards were around. The mine was a devastating sight. Layers of purple mud earth, ravine like hill faces piles of mineral lumps glistening in the sun around a central crater filled with water from the last rains. The contrast was heightened by the lush green tree cover in the background remains of the once dense forest. In next few days this became a familiar scene.

The mine area was quite large and mining seems to be taking place through the usual bench and shovel method. After the primary extraction the metal lumps were broken and sized by hand before loading and transporting. Overburden removal, which seemed to be going on, was purely mechanical. The Baitarani mines near Jharan were a small privately owned iron ore mine. This mine was entirely under manual operation and looked more like quarry. Most private mines of iron ore and manganese in north Orissa look like this. The mine employed not more than hundred people at a time. The work was contractual and payment on a piece rate basic. The mine employed both men and women. The wage rate is fixed not only according to the size of the box filled but also the grade of the mineral determined basically by the percentage of iron content. The average income of an "unskilled" worker is anywhere between Rs. 40 – Rs. 100 per day. In rainy season the quarry site generally fills with water and the mining operations are temporarily suspended. The supply of ore is generally to the nearby sponge iron plants.

In this mine there were people working even on a holiday. From a distance the quarry looks as though it has been gouged out of the hill. The inside edges of the depression were raw red in colour deep yellow with the exposed bands of Jasper, the outside was dark green with the remaining trees. There was two or three deep crater like indentations. One of these was full of water, the walls had collapsed and the overburden of earth and rubble lay heaped over it. There have been frequent incidents of accidents in these mines.

Tisco's 'Hilltop' iron ore mines in Joda are highly mechanized. Winding roads takes one about an hour to reach the mines at the summit of the hill. There is heavy traffic on the road, red with iron dust, mud and earth. The mines stretch

out as far as the eyes can make out. The operation is entirely mechanized. Close to the mines, they have a large ore crushing and washing plant. There are these large setting tanks and mechanized sprinklers. The crushed and washed ore is transported through conveyor belts to the nearest railhead. The wastewater is let out to a tailing dam before being released to the Kundra nalla a perennial stream, which later joints the Baitarani river. The water requirement for the plant is very high. Being an entirely mechanized operation with a high rate of production, the volume of overburden generated per unit of production is also very high. Consequently a large area is required for dumping of the overburden. Lease area stipulations are often violated for this purpose. The surrounding forestlands serve as convenient dumpsites. Practices like wastewater treatment etc. are also not followed. The Kundra nalla carries the water water from Tisco's tailing pond all the way down to Joda town where the majority of the population plants like the IPTATA sponge iron limited continue to dump their waste in the same rivulet which flowing out of Joda passes through a number of villages. It is a common sight to encounter mounds of overburden and debris all around the actual mine area. They stand out as large as the surrounding hills, as ugly protuberances against the deep green of the remaining forest.

Outside the walls of Tisco's Ferro Manganese plant in Joda town, is plainly visible large heaps of scraps strewn over a considerable area. There were people there mostly women and children sorting and collecting the waste for a living. The dichotomies are painfully apparent between the sanitized township areas with their model playgrounds and nature conservation posters and the existence of the majority of the inhabitants among rubbles and scrap heaps.

IPITAT's sponge iron plant in Bileipada, generate huge volumes of slap per unit of production. Their manner of disposing of the waste is in the form of digging pits and filling them up with the wet slap. On draying, which takes around a couple of months the pits are dug out manually. The waste is taken out and dumped somewhere else. People are employed on a contractual basis to dispose of the slag. The liquid waste is emptied in the Kundra nalla. There is nothing even remotely resembling a liquid effluent treatment plant.

The next stop

The Bonai subdivision is on the border of Sundergarh and Keonjhar districts. Around the Koira and Tensa blocks are the heavy mining areas. The contact was an organization called Sunder Gramya Unnayan Pratisthan at Lahunipara. Some of the organization's work area lay in the Bonai subdivision and so they were very familiar with the area. Bhutura is a small village in the Bonai subdivision of Sundergarh district. Within a twenty-kilometer radius of the village were some of the major mines. Bhutura was around 65 km from Lahunipara. The area still has a high forest cover though the quality of forest has been deteriorating with time. Beyond Barsuan town there are no roads. There are incidents of tuskers attacking passing vehicles and pedestrians. The elephants from the forests were taken to block roads and rampage in the nearby villages. This had happened with

the forest growing thinner every year. The roads are narrow and winding and go uphill. Truck headlights are common. The huge loaded giants drive like maniacs downhill. Occasionally there are villagers with loads of timer or cattle.

Barsuan is a small town. Suddenly the forest recedes and one is greeted with gateways marked with the sign of The Steel Authority of India. Barsuan is literally SAIL territory. From the gate onwards there are fluorescent lights on both sides of the road. The railhead and the glittering SAIL ore crushing plant are the only things visible after dark. Being brilliantly illuminated and situated high on the hills, in the night it seems to be floating over valley.

After Barsuan, the roads disappear for good Bhutura was approachable only though narrow trails going through forests, these are made of gravel, mud, small rocks, in places covered with small streams. It goes phill all the time. In places there's thick green slime on the path and vehicles skid dangerously. A meeting had been arranged in Bhutura. Many of the villagers went to the nearby mines for wage labour. The discussion was on the mining in that area in general. There were certainly many opinions, which came out. The atmosphere was quite hostile. People who had some kind of permanency of employment were quieter in comparison to those who had only temporary jobs, which was the case with most people. There were strong feelings against migrants who lived in the "company huttings" and were said to enjoy better facilities. They wanted better wages, a permanent jobs and better facilities like schools and hospitals. The work was hard the wages low and being a hilly area cultivation for those who had some land failed to meet the basic survival requirements. Most of the people in the village were working in the Manganese mines owned by the Aryan mining corporation, a Calcutta based company. There were some discussions regarding contractors but not too many people were willing to talk about it. The common response seemed to be in favour of mining as long as it was giving a fair deal to the people in terms of employment and other benefits. Most people were unable to recall or express the pre-mining status of the land. Many said it used to be the forestland.

There was no electricity in the area. And yet watching films on the video in the nearby mining settlement is one of the most common sources of entertainment there. In Bhutura village many children and adults have frequent bouts of malaria. Undetected epidemics of cerebral variety of malaria have left many children with permanently damaged central nervous system and other deformities. Hemlata's 10-month-old son contracted malaria from her. Bhutura does not have any transportation facilities. There is some kind of bus service, but one cannot rely on that. Especially during the rains and just after it. The approach road, turns into a muddy rivulet after a spell of rains. Villagers have to walk ten to 15 km over harsh terrain to reach the nearest medical facility in Tensa town. Reaching there is not the end of worries either because the government hospital at Tensa ails with the familiar problem of scarcities, no beds, no doctors, no medicines. Added to all of them the deliberate discrimination practiced towards the tribal, does leave very many choices. Hemlata's son could not be treated in time. The child now a year old

has not developed motor coordination and cannot control the movement of his limbs.

Bhutura, which looks impenetrable during the night, takes on a discernible shape in the morning. Part of the original forest is still retained. There are huge trees, mostly Jackfruit, Sal and Mangoe. Tall with large girth's dwarfing the village. Small patches of land that are cultivated look rocky and uneven covered with patchy growths of Maize and some vegetable. It is difficult to have viable settled agriculture on the hilly land, cleared from the forest. The nearest mine is a Manganese ore mine owned by a small Calcutta based private company. It is less than a km from the village. Seasonal migrants came to work in the mines from villages around 20 to 40 km away from the area. They usually had relatives among the villagers or the workers in the mines.

The Aryan Mining Corporation's Manganese mines in Mahuisukha is a typical example of the nature of ownership in the mining sector till recently in Orissa. Small lease area and comparatively less valuable deposit than what is held by the public sector. The mines are worked by hand using local contractual labour, both men and women. Men mostly do the cutting and breaking of the lumps from the parent ore seam while women do the sizing, grading, filing and lifting boxes, straining the fines etc. Permanent employees include a handful of technical staff. Production fluctuates, is often seasonal. The company cuts costs all the time to maintain some amount of profitability. The few houses where the permanent staff stays comprise the township. Staff turnover rate is high.

There is a small private manganese mine inside the Sarkunda reserve forest area. The place is supposed to have rich deposits and was discovered by a British prospector in the last century. The subsequent offices of the various firms, which came after him, operate from the colonial bungalow, which he had built for himself in the middle of the forest. The mine was earlier owned by S. Lal but lease had lately been transferred to Essel Mining Corporation owned by the Birla Group. The workings of the deposits have virtually come to a halt. The earlier company burnt its fingers badly in the deal. The permanent staff comprises of three people who live in the office. The villages within the mining lease area most of which is yet unworked, continue with their typical livelihoods. They clear land in batches and practice shifting cultivation. It is as though the mining company has retreated and the villages have come back to claim their own. This situation might not last for long. The area has rich deposits and it is just the question of time when the new management takes over.

The state owned Orissa Mining Corporation's owns the mining rights to the valuable Iron ore deposits spread over a large area inside the Khandadhar reserve forest. The approximate location is about 15 km south of the Sarkunda reserve forest. The OMC has a considerable amount of area under its lease. Its fenced in boundary constitutes of "hutting" for their workers and quarts for their staff. The Orissa Mining Corporation's Iron ore mine is what is known a mechanized. The labour therefore still contribute significantly to the extraction process. In all these

years, they have not made any attempts to regularize the labour. Since it's inception the OMC has worked with several contractors who "arrange for the labour. The present contractor who has been there for three years is based in Badbil Around four hundred people are employed for the purpose of ore raising transporting and wagon loading. There is no permanency of labour. The wages are paid on a piece-rated basis. For filling a 20 cubic feet box a miner is paid. Rs. 39 for sponge grade ore and Rs. 27.50 for soft or low-grade ore. There is no labour union. The use of timer from the nearby forest seem to be prevalent both among the mine labourers, many of who are from outside and the local villagers. Piles of fresh logged wood are a common sight.

In the OMC areas yet to be mined, villagers continue with their traditional livelihood practices like clearing patches of land and cultivating, collecting fuel wood and other forest produce. Wood is plentifully available, no doubt due to the proximity of the forest. The settlers from outside who have come mainly to work in the mines also cultivate and collect forest produce to supplement their income. The OMC lease area is considerable and the pre mining land-use records show that it is located almost entirely inside the Khandadhar reserve forest. It was difficult to determine where forest boundaries end and the village land begin. It is common to see villagers coming with headlands of small timber, fuel wood and grass from the forest. There is a fair amount of public mobility within the leasehold area. Many villagers even cultivate small patches of land for paddy and vegetables. The holdings could be cleared forestland or original cultivation sites under the lease area but yet to be exploited or a combination of both.

The instances of violating forest legislation are very common in OMC operations. The dumping of wastes and debris inside the forest is rampant. According to the divisional forest officer Bonai sub division, recently an OMC mines manager and surveyors were booked and their dampers seized for illegal dumping of overburden in the forest area. The OMC Khandadhar project is presently operating on a state government work permit since the expiry of their lease in 1987. Further renewal of lease requires undergoing a procedure called the dereservation of forestland, a lengthy project involving clearance from the central government.

The mines offers most horrifying sights of hillsides broken open on one-side at a stage of collapse in many others large trees with their roots hanging bare, mounds of gray-black dumps contrasting with the blood red of the mines. The benching in the miens is also haphazard, giving one the feeling that one rain would be enough to send the gigantic mass cascading down into the roads and the valleys. Work conditions are extremely hazardous with people hand-mining below and leveling and benching with machines taking place simultaneously on top of them. Meanwhile work goes on in the mines with some of the best grade deposits in the area, despite frequent incidence of pilferage and the haphazard mechanization. The rumour that is making rounds of the mining circles in that OMC intends to hand over the mining lease to private investors, this in fact could be one of the reasons

behind the low level of capital investment and management involvement with the project.

Barsuan valley, which was referred to earlier is the SAIL stronghold. SAIL has considerable leasehold in the area. It's mining leases, factory and township covers a large area. The SAIL area includes the Barsuan iron ore mines the ore crushing and washing plant, the Taldih area and the small hand mine at Kalta. The pre mining land use of the area is not difficult to determine. SAIL's leasehold area is almost entirely inside the Torha reserve forest. A number of villages have also lost their agricultural land to mines. The present operating areas of SAIL can be divided into three blocks.

The Barsuan iron mines at Barsuan valley is completely mechanized. There is also an ore crushing and washing plant attached to it. The impact of which is apparent in the Barsuan valley area. The Kuthari river which flows down the valley into the villages carry the washings from SAIL's tailing ponds. Large gray-black dumps are clearly visible along the hillslopes covered with the richest forests. The heavy traffic of trucks to and from the mines to the rail heads and elsewhere leave the roads and surrounding vegetation covered by a thick layer of red iron ore dust. While halogen lights glow in the approach road towards the mine and plant area, the villages in Barsuan valley are not electrified.

The Kalta mines of SAIL are still manually operated. The ore is mined, broken and graded by hand. The mine labour has not been regularized, independent contractors supply labour' and SAIL is relieved of the responsibility to provide them with conducive work environment, adequate wages and additional benefits like medical benefits etc. SAIL intends to close down the operations of the Kalta area shortly and undertake complete mechanization of their mines to "enhance profitability and reduce waste".

The SAIL township provides for tap water, electricity, schools, hospitals and playground, clubs etc. Villages two km away don't have basic facilities like an approach road, public transportation, primary health center, potable drinking water, schools etc. The high incidences of communicable diseases in the area are combated with delayed, often non-existent treatment.

Location and comparative details of the iron ore and manganese mines visited in Sundergarh district.

Koira block in Sundergarh district has the largest concentration of iron ore and Manganese mines. The area also has a high percentage of ST population (74.58%). The total forest area of the block is around 14,805 ha. which does not include reserve forest, protected forest area. Most of the mines are inside reserve forest or protected forest areas.

Mining has taken place in smallholdings in this area since pre independence times the harsh terrain, rocky and uneven and deep forests inhabited by wild animals were some of the major deterrents towards large-scale exploitation. Things have changed since then. Since the last forty years the pattern of ownership of mining leaseholds in the area has been reflective of the entire country. The state government and Central government associated public sector units hold large mining lease areas, the private sector holds small fragmented leases. Even in terms of nature of minerals, the more economically valuable ores and deposits were under public sector lease hold. The SAIL for instance holds an area of 2486.39 ha under six mining leases for iron ore.

Details of the small private mines

- Aryan Mining Corporation
  Mahulsukha Manganese mines
  mineral mined: manganese ore lease area: 398.829 ha.
  Location: PO Bhutura, Via Barsuan

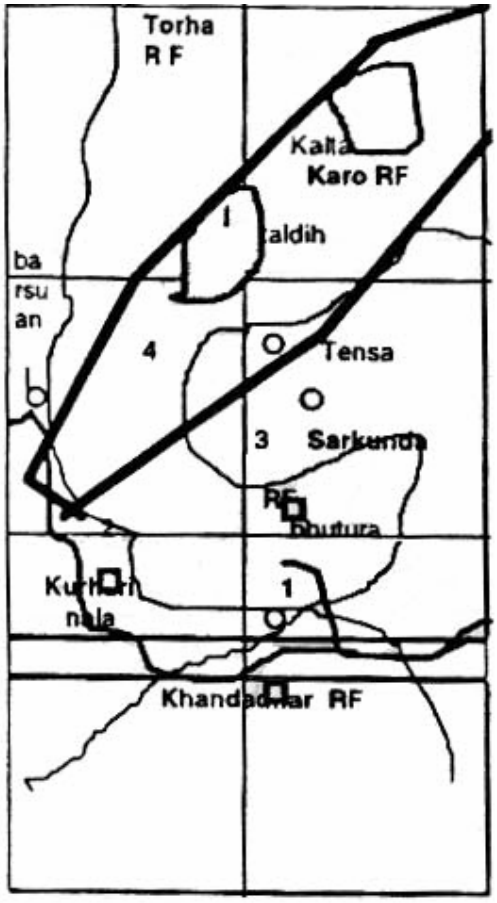
- Essel Mining and Industrial Corporation Ltd.
  Sarkunda Manganese mines
  Mineral mined: Manganese ore
  Lease area: 160.9 ha.
  Location: Sarkunda village, via Barsuan.

Large Public Sector Mines

- Orissa Mining Corporation
  Khandadhar iron mines
  Mineral Mined: iron ore
  Lease area: 1212.471 ha
  Location: Rantha village

- Steel Authority of India Ltd.
  Barsuan, Kalta and Taldih iron mines
  Mineral mined: Iron ore
  Lease area: 2486.39 ha.
  Location: Koira block

Let us look at the comparative locations of the above leaseholds in Koira block of Sundergarh district.



Mine areas

1. OMC Iron Mines
2. Aryan Mn Mines
3. Essel Mn Mines
4. SAIL Iron Mines

(The dark black border marks SAIL's leasehold area.)

Village areas

Note: the diagram is based on topo sheet no. 73 G/1. It is not drawn to scale.

The land use pattern of SAIL's mining leasehold.

When we look at SAIL's lease-holding pattern we must keep in mind the following:

- It is the largest area under a single lessee in Koira block
- It's proximity to the reserve forest
- Distribution of villages in the concerned area
- Proximity to large surface water source
- Pre mining land use
- and the status of existing mining lease

The Steel Authority of India has a total lease hold area of 2846.39 ha in the Barsuan valley.
The entire area is a combination of seven mining leases.
The expired mining leases constitute 2653.41 ha.

Present status of SAIL's mining leases in the Koira

Name of the mine	Mining lease no.	Area in ha.	Expiry date
Barsuan Iron mines	162	77.96	28.04.2000
	232	111.14	17.08.89
	130	976.43	05.01.90
Kalta Iron mines	130	336.47	05.01.90
	139	25.98	16.01.95
	140	29.89	18.03.94
	192	28.72	04.04.97
	227	3.34	17.01.04
Taldih Iron mines	130	1173.50	05.01.90

The largest single lease ML: 130 cover an area of 2486.4 ha.

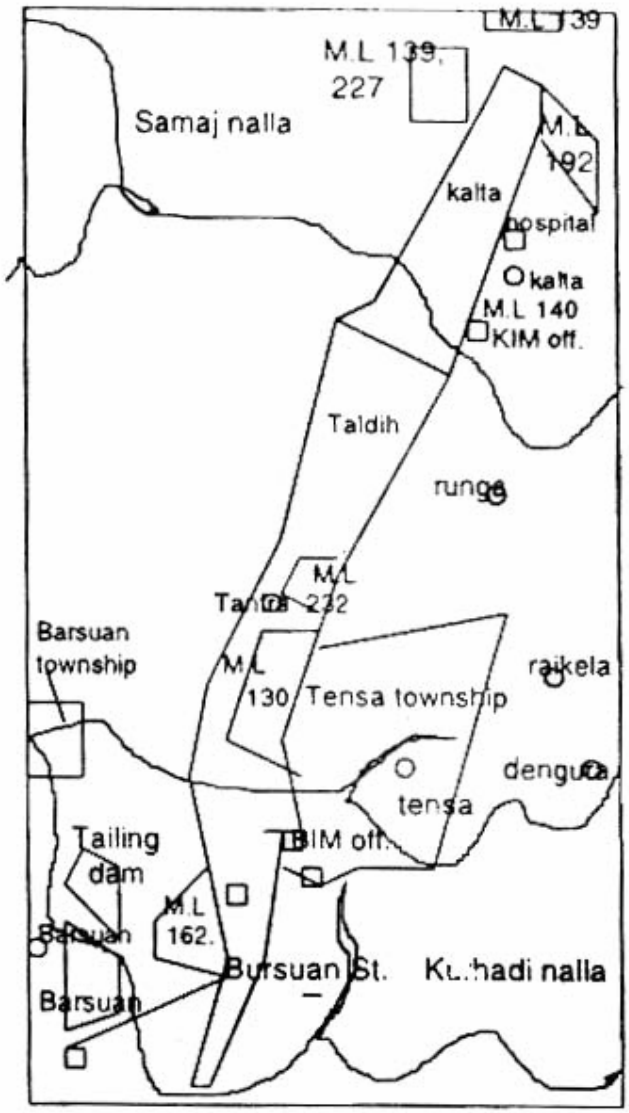
The pre mining land use looks something like this.

Land type	Total hect.	Transferred to the management	Not transff to the management	Present owner
Reserve Forest	1891.15	1298.77	592.38	F.D.
Khesra Forest	507.59	570.59	-----	-----
Village Hamlet	5.85	-----	5.85	Private
Cultivated	18.8	-----	18.80	Private
Total	**2486.39**		**617.03**	-----

Present Land use of SAIL Mines at Barsuan, Kalta, Taldih Blocks.

Land use	BIM	KIM	TALDIH	TOTAL
The working mine	223.02	143.00	140.00	506.02
Overburden dump	70.24	23.00	-----	93.24
Roads	2.93	5.00	5.00	12.93
Statutory & Indus bld.	4.28	13.00	-----	17.28
Private land	-----	-----	24.65	24.65
Ense Forest	66.38	-----	556.46	622.84
Other Forest Land	609.58	152.47	4447.38	1209.43
Total	**976.43**	**336.47**	**1173.49**	**2486.4**

- **Schematic Diagram of SAIL's leasehold area.**



2. Coal Mining; the Ib valley experience

- The coal sector in India was nationalized in 1973.
- Mining of coal was restricted to the nationalized body Coal India Limited and its subsidiaries.
- The Ib valley coalfields are managed by the Mahanadi Coalfield Ltd., a CIL subsidiary.

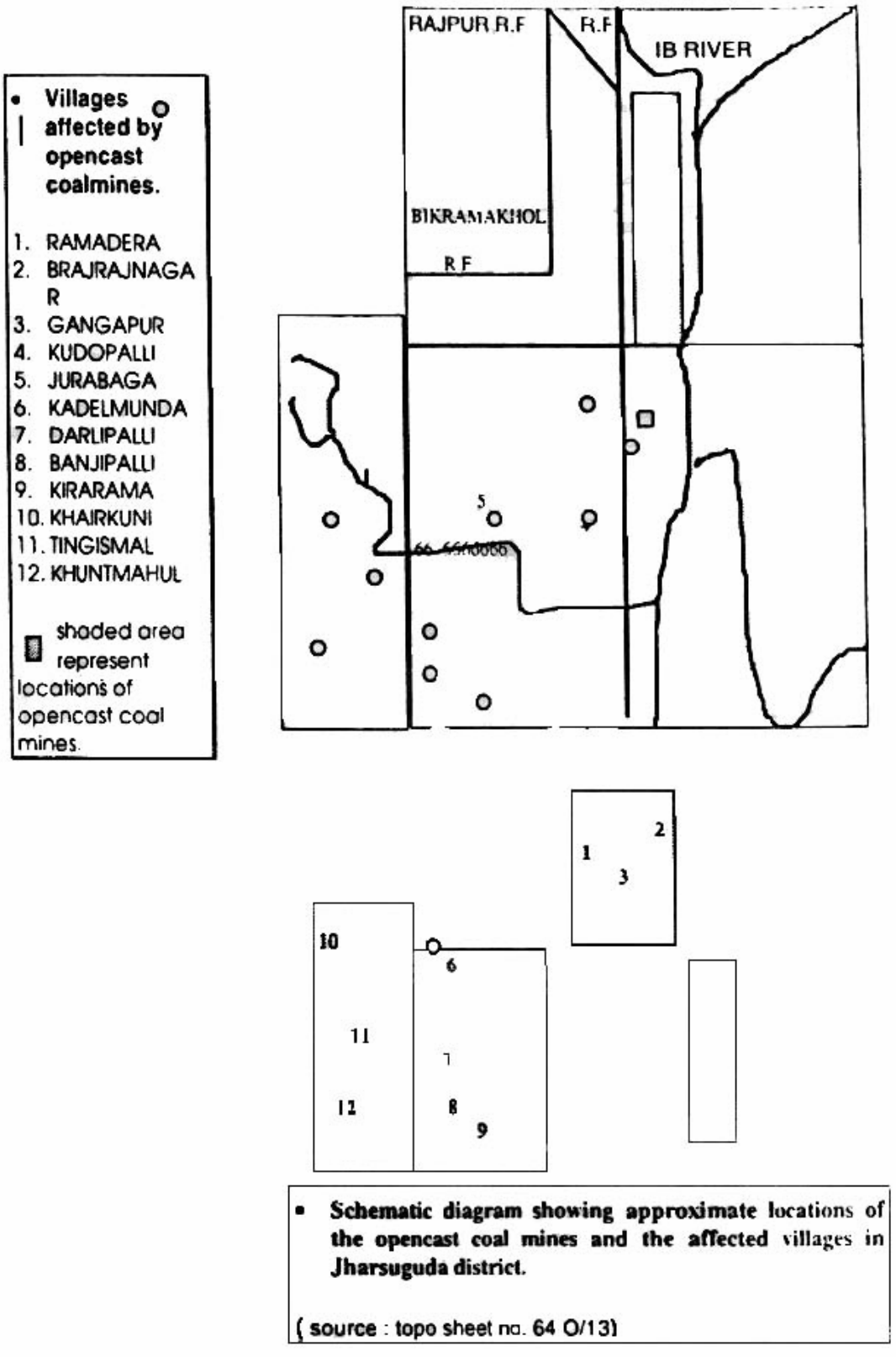
Orissa has two major coalfields. Talcher in Anugul district and the Ib valley area spread over the district of Jharsuguda and Sundergarh. For our present discussion we shall restrict ourselves to the Ib valley area.

The Ib valley coalfields form a part of the catchments area of the Hirakud reservoir. The Ib valley holds large reserves of primarily power grade coal. The four operative underground mines in the area cover an area of 22.74 sq. km. Open-cast mining of coal is a fairly recent phenomena. Presently there are five opencast coalmines along the Ib riverbank.

Proximity to the coalfields and reservoir has led to the establishment of thermal power plants and other industries in the area. This had resulted in rapid urban growth. It has meant large-scale deforestation and increasing pressure on the resource base of the nearby villages. In the last thirty odd years a lot agricultural land has been converted into coalmines.

The shift in the occupational pattern of the local population has not kept up with the rapid changes in the local environment. Earlier villagers losing their land to coal mines had more chances of landing a colliery job. Lately with the increased mechanization of the mines the probability has come down drastically. Coalmine expansion programmes are being intensified with more and more villages likely to be affected in the coming years. The pressure on the ecosystem is apparent. The colliery town Belpahar, presents a picture painted on, bare landscapes, straggly, congested urban clusters, empty pots lined outside solitary taps. In the dark grimy alleys one can see vents hissing steam. In some of the older pit mines, steam is used to work the underground lifts. The streets are damp and muddy with coal dust. The inherent contradictions in our economic systems are blatantly visible. The Tata refractories have advertised on a huge placard prominently displaying their contribution to the society. Several hundred family planning operations undertaken by them. But Jharsuguda district no longer seem to have any place left for its people. Villages from where the smoke spewing chimneys of Ib thermal power plant are visible do not have electricity.

Most of the open cast coalmines have up in the backyards of the villages. The rehabilitation record in the coal-belt has been rather bleak. The Hirakud reservoir displaced people have yet to get their land titles regularized after forty-five years. The Ib thermal power plant displaced people have not received any compensation. The coal sector has rehabilitated less than 35% of the displaced people in the last twenty years.



- **Schematic diagram showing approximate locations of the opencast coal mines and the affected villages in Jharsuguda district.**

(source : topo sheet no. 64 O/13)

Jharsuguda district presently has five opencast coal mines

Name of the mine	Total leasehold area in hectares	Year they began
Belpahar OCP	2523.88	1983
Lillari OCP	(part of 1)	1988
Lakhanpur OCP	3145.75	1991
Samaleshwari OCP	1864.2	1989
Lajkura OCP	(part of 4)	-----
Total	**7533.83**	

The pre-mining landuse pattern of the leasehold area acquired/under acquisition

Land Type	Belpahar OCP	Samaleshwari OCP	Lakhanpur OCP	Total area in ha
Tenancy	538.76	292	475.12	1305.88
Government	785.12	300	551.45	1636.57
Forest	277.34	348.49	233.43	859.26
Total	**1601.22**	**940.49**	**1260**	**3801.71**

Source: Coal India's Loan appraisal notes: 1991-95.

As the local people remark "There is coal everywhere under every inch of soil on which we live, does that mean they'll dig up everything?" Lately the MCL has devised a new strategy. While defining their lease area they generally skirt around the actual home-sites of the village and acquire the rest of the land in stages. As a result some of the villages like Charla have become islands inside a veritable sea of opencast mines. Among the land types acquired or under acquisition for coal mining purposes. Government land and Tenacy land constitute 80%. This category of land support a substantial part of the village communities in the form of cultivable land, home-sites, common pastureland, village woodlot, etc.

The extent of displacement, in terms of number of villages and families affected (Coal India Figures)

Extent of displacement	Belpahar OCP	Samaleshwari OCP	Lakhanpur OCP
No. of villages	4	4	5
No. of families	695	330	207

The general practice is to quote the number of families rather than the total number of people displaced. This helps in disguising the extent of displacement. The affected villages are the most significant losers. Government statistics generally do not disclose the breakups of the acquired land especially their utilization pattern. The extent and nature of dependence on the land that is acquired is underplayed by the authorities.

In all acquisition notices the major portion of the land comes under the ambiguous head of "Government land". It is often described as "uninhabited and uncultivated". The extent of loss is thus disguised and the dependent persons are not considered eligible for any compensation. For instance certain villages whose

tenancy or homestead land may not have been acquired are also affected directly due to loss of pasture lands, depleted forest cover, etc. Further, settlers dependent on common land of the villages are entirely out of the scheme of rehabilitation. Thus the process of displacement follows a well-practiced pattern.

Around the Belphar area, there are five rehabilitation sites, constructed for the people displaced by open cast coalmines. Hardly any families had shifted into them. The rehabilitation sites are cramped, constructed in a primarily urban pattern of brick and cement houses in a row. Oustees from several villages were to be settled in a single site. Much touted superior infrastructure facilities are often only on paper. If the rehabilitation sites are to epitomize the apparently superior and so-called modern urban settlements, then there should also be present the modicums of urban conveniences. If they expect people to live in rows of concrete houses then they should also provide tap water, sewage system, garbage disposal system, sanitation facilities, electricity, etc. Needless to say none of these were available.

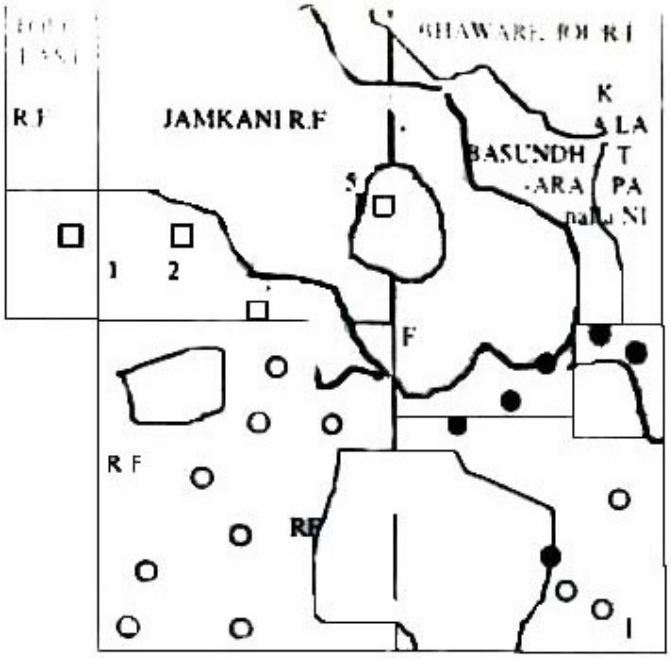
There were strucutures marked school, dispensary and shopping centre and that's about it. Coal India management would not take the responsibility of making those structures functional.

The employment criteria becoming more and more stringent very few people end up qualifying for it. For instance the opencast projects till now have promised less than 400 jobs for the displaced who number over 5000. Apart from the fundamental problems in the design itself, the rehabilitation programmes are further subject to rampantly corrupt practices. Instead of mitigating the impacts of displacement it ends creating even more complex problems in the area. In many cases divisive practices are deliberately followed using monetary bait to destabilize communities.

In the individual scramble for survival and a bigger slice of compensation, long-term community interests are lost. In such situations it is also difficult to sustain the communities bargaining power that could enable them to extract a just deal from the state. In the coming years the expansion and intensification of mining will have critical impact on the lives of hundreds of families settled in the coal belt, some of the anticipated impacts are already taking shape in the planned restructuring of the coal sector and the expansion work already underway.

- Let us first look at Mahanadi Coalfield's expansion programme in the Ib valley area of Sundergarh district.

Mahanadi Coalfields expansion programme in Sundergarh district



Schematic diagram based on MCL's Expansion plan map and topo sheet no. 64 N/12 (Not in scale).

The Mahanadi Coalfields Ltd has marked out eleven geological blocks in Sundergarh district for opencast coalmines. The blocks proceed along the bank of the Basundhara tributary of Ib river beginning from Manoharpur. Dulanga villages passing onto Jamkani in the border of MP and Orissa.

- Ib valley expansion areas in Sundergarh district. (1 is in MP)
- Blocks earmarked for expansion
  1. Jamkani
  2. Bijahan
  3. Ghogarpalli
  4. Gopalpur
  5. Rampia
  6. Basundhara
- Villages where the first mine under this plan have already started work.

Tikhpara and Talipara villages under Basundhara open cast project.

- Villages to be displace by Basundhara and Kulda OCP.

RF: Reserve forest
Inhabited areas

Work has already started in the Kulda and Basundhara blocks. The land to be acquired for mining would have a considerable share of forestland as well village land. Besides the large areas under reserve forests, the chosen sites are densely inhabited (The diagram shows only six blocks). Mining would have a critical impact on the local population.

Areas of the geological blocks coming under Ib valley expansion programme.

Name of the block	Area in ha.	Coal reserve in MT
Kulda	584	462.00
Basundhara	320	85.00
Chaturdhara	380	127.00
Garjanbahal	580	300.00
Manoharpur	580	280.00
Meenakshi	950	480.00
Siarmal	300	300.00
Rampia	630	210.00
Ghogarpali	1000	180.00
Bijahan	1000	100.00
Jamkani	1030	80.00

The land area given above only accounts for the geological block of available deposits. Each project when developed for actual extraction will require more land for township, infrastructure, etc. Many villages might be displaced completely. Quite a number of them would lose their common land. The pressure on forest will be enormous. Clear felling on actual excavation sites and associated pressure of local and outside settlers on the remaining forest.

As far as promises of compensatory afforestation is concerned. Coal India's record speaks louder than words. It is doubtful whether one would find even one acre of replanted site for the thousands they have clear felled in their course of operation. Unless of course one considers rows of straggly Eucalyptus planted outside their colonies as adequate compensation for the prime forests lost to coal mining within a space of thirty years. The forest department apparently thinks so for there are no complains from their side. In fact the recent injunction permitting compensatory afforestation in districts other than where forestland has been acquired for non-forestry purposes, has created ample scope for further manipulation of the law.

Ib valley expansion programme is in Hemagiri tehshil of Sundergarh district. A profile of Hemagiri Tehsil

- Area: 548.36 sq km
- Area under forest: 213.52 sq km
- No. of villages: 141
- %age of ST population: 46.82
- Net area sown: 142.80 sq km

(Source: District Statistical handbook, 1993, Sundergarh district).

To make the point clearer, let's say one acquires a piece of forest land for mining in Sundergarh district according to the existing legislation one can compensate for it by planting "x' number of trees in "y" area of land in another district. When monitoring is flawed and ineffective within a single district itself, who can be held accountable for discrepancies in another. This also a typical example of passing the buck among the various departments. Ultimately it

becomes difficult to identify the responsible department and within a short period of time everything is forgotten. Bureaucratic amnesia works well for raising project viability. The present requirement for compensatory afforestation is ridiculous even as a concept. We shall come back to this later as we summarize the broad impacts at a later stage.

The extraction work has already begun in the Basundhara and Kulda blocks. The village Tiklipara, Talipara and parts of Sardega has been served acquisition notices many villagers have started moving to the rehabilitation site.

According to the local people, the displacement figures quoted by MCL are an underestimation. This is quite understandable as the base line surveys are done by an organization, which is in MCL's pay and is said to have collected the data without even visiting the affected villages. The most frightening observance in Tiklipara has been that most people are completely unaware of the nature of changes taking place in their lives. Most information is based on hearsay. Fraudulent practices have started with the compensation money. MCL is playing it's own divisive games by selectively disclosing information and arbitrarily distributing resources. Temptation and Coercion being wielded to make people move.

(Source: MCL, 1996)

Displacement figures

Basundhara East opencast mines
Village: Tiklipara
Population displaced: 858

Basundhara West open cast mines
Village: Sardega, Gopalpur
Population displaced: 671

Kulda open cast mines
Villages: Kulda, Bankibahal, Baluga, Siarmal
Population: 1507

Total villages: 7
Total population: 3036
Total forest land: 1000 acres

In one of the hamlets some people have been apparently interviewed (testing endurance capacities by making them carry sand filled sacks for a few km and timing them) by Coal India officials for future jobs. This is tantamount to cheating as CIL's recent rehabilitation policy for all its fancy jargons, clearly spells out "No jobs" and "No land" as compensation. A large area part of the forestland has already been clear felled. The contract for which has been "judiciously" given to the state environment minister's father. The environment minister himself came to distribute prizes in a local school function and to persuade the people to comply with the MCL deal.

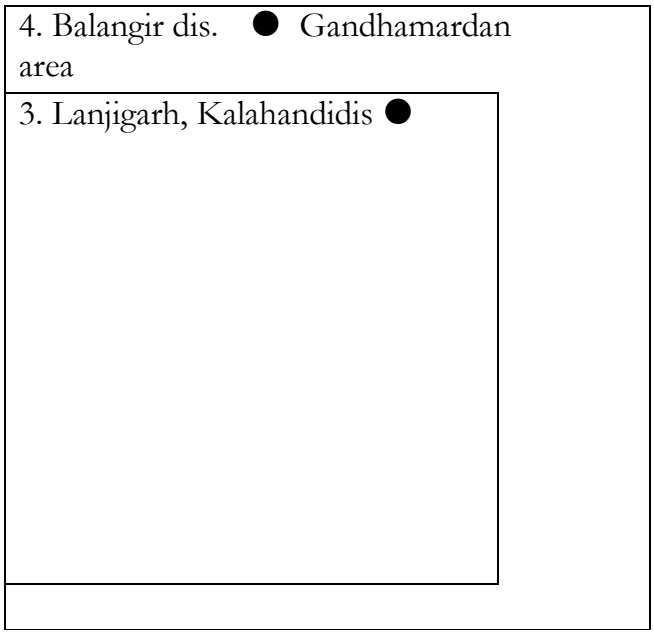
Tiklipara village is under upheaval. A bridge has been built over the Basundhara nalla. Pipelines are being laid to carry water to the MCL campsite, the temporary residential area of the employees. Road are being built. The village looked ghostly with half broken houses of people who had shifted to the rehabilitation site. In the fading evening light the mine site looked like a large pond. Rainwater had filled the excavated site. Work was stalled for the time being. Barbed wire fences demarcated the area from the surrounding land, which were

being cultivated. A large blue painted notice read "Bathing Prohibited by order MCL".

The recent changes in Policies and their implications

Major restructuring is underway in the coal sector in India in keeping with the overall economic policies of the state; the coal sector is under pressure to be opened up for private investment. The World Bank's US $500 million loan for the rehabilitation of the coal sector and the IDA loan of US $50 million are in the process ob being sanctioned. The loan is to cover 33 mines in CIL's subsidiaries. The conditionalities attached with these loans are bound to have a critical structural impact on India's Coal industry. Some of the significant conditions are as follows:

Reduction of employees. According to the world bank CIL is grossly over staffed. Bank estimates have deemed redundant. 2,00,000 of CIL's current staff of 676000. The coal sector be opened up for private investors.



To eliminate import duty and deregularise coal prices. The environmental and social components have been relegated to a separate project termed Coal India Environment and Social Mitigation project costing US $80 m. (source EPW Mar 16, 1996).

The new industrial policy for the 9th plan period calls for the de-licensing of coal.

The structural changes in the coal sector would increase vulnerabilities of the local population. Large private investment would intensity mining in coal rich areas. This would inevitably cause large-scale deforestation, displacement of local communities and degradation of the existing resource base. The employment generated will certainly not be for the local inhabitants. In fact many of the erstwhile employees of Coal India will be retrenched. The social components of the project, which would also include the rehabilitation measures, will in all probability be retained by the state. The private sector thus will be absolved of all accountability towards the systems of lives and livelihoods, which their operations will directly impact. With the pressure increasing on the depleting resource base and the large private investors monopolizing the lion's share and dictating the

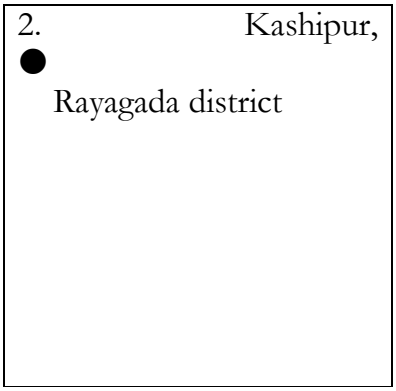
terms of distribution, the erstwhile owners, communities and small groups are in for the worst deal.

3. Bauxite boom in the southwest

The east coal Bauxite deposits occur in a belt that travels in a northeasterly direction passing through the districts of Koraput, Rayagada, Kalahandi and Bolangir. The deposits are said to cover a contiguous area of 25000 sq. km. Lengthwise it extends up to 300 km with the width varying from 40 to 100 km.

The extraction of this deposit began with the National Aluminum Company in the early eighties. The NALCo area, as it is known, constitutes the central group of deposits with an estimated reserve of 375 mt extending over 21 km. NALCO's Bauxite mine at Panchpatmali is the larges in Asia. Intensive Bauxite mining is a comparatively recent phenomenon in India. The modern trends in mining and related industries are therefore clearly visible in this sector. The basic features of these projects are:

- Large leasehold area for mining
- Highly mechanized mining with a high fixed rate of production
- Associated processing plant
- Export oriented production
- Captive power plants
- Autonomous railheads and port facilities
- Large-scale displacement of local communities



1. The Panchapatmali hills are mined by the NALCO.
2. The Baphlimali hill in Kashipur tehsil is to be mined by the Utkal Alumina International Ltd.
3. The deposit at Lanjigarh is to be mined by L&T.
4. The Gandhamardan deposits were the earlier efforts of Balco met with local resistance and stopped has aroused the Reliance groups interest.

- **Anticipated impact OF bauxite mining in Orissa**

NALCO was one of the first companies to begin large-scale. Bauxite mining in Orissa. According to their own figures and subsequent studies conducted in the area, close to 26 villages were affected by the mining activities

- NALCO's lease area 7204.74

as well as the construction of their Alumina refinery plant and township for their employees.

The mines are situated on top of the Panchapatmali hills. The vast flat expanse of high-grade deposits at low depth makes especially lucrative for extraction.

NALCO has built a 15 km long conveyor belt to transport the ore from the mine to their plant in the plains.

The valley slopes have scattered habitation in hamlets. On our way up the mines, we met groups of people carrying head loads of grass and small timber. Under the high voltage conveyor belt, innumerable cattle graze.

ha.

- Land acquired by NALCo for plant, township and mines 6852.57 ha.
- Around 26 villages have lost their land fully or partially.
- % of S.T. population in the fully displaced areas: 47.7
- Villages within 10 km of Damanjodi area are in the future impact zone.

NALCO is supposed to simultaneously backfill excavated area with overburden and plant trees. The trees planted till now are more like single file Eucalyptus in avenue plantation. And the rate and extent of excavation are certainly way ahead of the reclamation. What is disappearing is the typical vegetation of the area combination of certain species of grass and dwarf palms.

1. ● Panchapatmali Deposits, Koraput district

The NALCO plan area is almost entirely transformed. No body could guess the existence of the Erstwhile villages in the area. All ground Aluminum plant is located, a huge shantytown has grown. Besides the post and sanitized NALCO township the rest of Damanjodi bears a slum like appearance. Workshops, garages, eating houses stone crushing units, a dusty industrial outgrowth where the disparities are even widening and highly visible. It looks only around a decade to bring about such a drastic change. The extent of displacement due to the NALCO project is yet to be realized. Especially since there are villages which would lose land in phases. Assigning a large section of land under the ambiguous head of "Government land", disguises the nature of loss to the erstwhile settlers in the area. The Panchapatmali hills are not uninhabited as is claimed complacently by the NALCO officials. There are settlements in the valley slopes and the people living in the plains also have livelihood relationship with the natural resource base of the plateau.

The high walls, barbed wire, security boxes every two km, inside what is now the NALCO area underlines the loss of access to resources. The dumping of red mud, which is the primary waste of the Alumina refinery in the local water sources, is likely to have serious health implications in the coming days. The pattern of displacement and destruction are likely to be replicated manifolds in the planned projects that are coming up in the area. The Utkal Aluminum International's project in Kashipur tehsil of Rayagada district is a similar venture. A

combination of Bauxite mines, a 20 km long conveyor belt carrying Bauxite ore to the refinery, the large township for the white collared employees, one can almost see Nalco happening all over again.

The project aims to mine the Bauxite deposits at the Baphlimali hills. The estimated reserves are of the order of 600 mt. They would acquire land belonging to twelve villages. A thousand hectares of agricultural land will go for the plant site at
Doraguda village. Large-scale displacement is a direct outcome of these projects. So much so, that nowadays it has become an acceptable phenomenon. Unpleasant but unavoidable. The initial acquisitions are only an indication of the shape of things to come. Expansion in phases comes as an in build criterion of these projects and more areas would eventually go in it. Most of these companies move into the area and begin their operations even before their mining leases are sanctioned.

Besides the new companies in the private sector moving in for a share in Orissa's abundant. Bauxite reserves, existing units like NALCO are planning major expansion in production within the next five years.

NALCO's expansion programme:

- expand it's mine capacity from 24 lakh tons to 48 lakh tons.
- Alumina capacity from 8 lakh tons to 15.75 lakh tons.
- implementation of downstream projects like Zeolite, Gallium and Aluminum-Lithium alloys.

Inspite of the disastrous impacts in the recent past, ventures like these are being promoted eagerly by the state government as the ultimate development alternatives for the so-called backward regions of the state.

4. All for Graphite

West Orissa has the largest number of Graphite mines in the state. Some of the mines are as old as fifty years. The nature of mining till recently has been entirely labour intensive. The wages are extremely low much lower compared to the iron ore and coal mining areas of north Orissa.

Mining, like all the other high value economic activities in the area are controlled entirely by a handful of Marwari and Gujarai settlers of trade community. In places like Kantabanji town in Bolangir district they are a law unto themselves. They have palatial houses, large landholdings, shops,

There were 114 graphite leases in Orissa covering an area of 2991 ha. in 1994-95.

- Bolangir district
  52 leases in 1349 ha.
- Bargarh district
  27 leases in 806 ha according to the state government's mineral

garages, transport fleets and mines.

Besides Graphite mining they are also involved in gemstone smuggling and marketing timber and other high value forest produce. In a chronic drought prone area the entire market including the prices of food grains are controlled by the Marwari traders who are also the local moneylenders. Agriculture is not productive on unirrigated marginal holdings; most people out migrate into nearby towns for wage labour. The graphite mining areas are infamous for extreme kind of exploitation. The work hours are extremely long. Work conditions are hazardous.

statistics the average no. of people employed daily in the Graphite mines:
1154 in Bolangir dis
382 in bargarh dis

Large numbers of people work in the graphite beneficiation plants. Work goes on in two to three shifts in many places. All labour is contractual. The contractors often belong to the same villages. Wages per day is between Rs. 15 to 20. Women get lower than the men. A week's wages are generally paid at the end of the third week of work, two weeks wages are always held back by the contractor.

Some of the graphite mines we visited where situated inside reserve forest boundaries. Work has been going on for years with no intervention by the forest department. Mounds of debries several hundred meters high, dried up forest rivers and large bare patches inside deep forest areas are a common sight. The kind of trees that were felled to make way for the mines are evident from the gigantic roots that snake along the ground in the mines.

In many cases agricultural land has been purchased or appropriated for mining as well as dumping the waste. Sludge from the beneficiation plant is dunked untreated into the water sources.

Lease areas and other legalities are very often violated. Mining in this area is more in the nature of an unorganized sector. Some of the mines are worked seasonally. Right after the monsoons the quarry pits fill with water, the tracks get destroyed and all work is stalled for the next couple of months.

About graphite mining in Bolangir and Bargarh district:

"Diamond" graphite processing plant is situated about 15 km away from Kantabanji town in Patrapalli village. It is owned by one O.P. Aggarwal who operates from Kantabanji town. Around 60-70 women were sceening mounds of fine grey Graphite dust. No information was forthcoming regarding their mine leasehold.

The owner was extremely suspicious of us. He was using the filthiest of language while addressing the women who were working there. On asking about the wage rates we were unceremoniously thrown out.

One thing was apparent, these guys had something to hide. The same attitude was reflected in all the other places without any variation.

Mines were mostly deserted, being just after the rains. The pits were full of water.

Terminal graphite mines in Khaprakhold block of Bargarh district, was situated right inside agricultural land and surrounded by the reserve forest areas of Gandhamardan. 5 km away at their processing plant in Menakamunda, the outlets released quantities of thick black sludge into the river.

Many of the more recent mines are worked partially by machines. The rumour that is rife in the area is that the mine owners are mining minerals other than graphite using their graphite mining leases. Quite believable considering the suspected deposits of diamonds and other semi precious stones in the region.

In the villages near the mines people seemed absolutely terrified of the mine owners.

The dependency on mines and the associated factories as a source of employment is very high. With the market being controlled entirely by a group of traders, the price obtained for surplus agricultural produce and collected forest products are always low, even in good rainfall years. So the selling (whether goods or labour) is at rock bottom prices while the buying rates for the same products are several times higher. Indebtedness is a permanent phenomenon and strengthens the exploitative mechanisms.

5. Proposed tin mining in Malkangiri district

No one had heard of any tin in Orissa. Till the HAMCO mining and Smelting Corporation, a Bombay based company applied for a lease to mine tin in Malkangiri, the southern most district of Orissa bordering Andhra Pradesh. What aroused our interest in the first place was the proposed scale of operation in an area which is difficult to access even today due to it's dense forest cover. An area was a stream and rivers are more common than roads. An area, which has almost 60%, scheduled tribe population. Not too many outsiders have ventured in that area. If the indications are taken seriously then one can anticipate the shape of things to come.

The total lease area applied for is 34 sq km. Interestingly Orissa Mining Corporation has applied for a contiguous lease to mine tin in an area of 22 sq km. It is openly acknowledged that one the initial legal wrangles and infrastructure development is over the lease can be transferred to Hamco. The nature of mining is highly capital intensive with sophisticated technology imported from Malaysia.

The large capital behind the project can be easily made out by looking at their operations. For the last two years waiting for the sanction of their lease, they have stacked crores worth of machinery in their base camp have built their own gas filling station in the station in the middle of the forest, bought land in several places for their future township, employed Malay Asian engineers, paying full salaries to their employees and all these even before their lease had been sanctioned.

The considerable mining lease goes into the land of several villages. In fact a few leases are located right inside a couple of villages. Further the future plans include building at least two ore smelting plants close to the mining areas. A major portion of the lease would also fall inside the Tulasi reserve forest. All this would have a serious ramification for the predominantly tribal population of the area whose primary livelihood is derived out of shifting cultivation and collecting forest produce etc. They are also unlikely to have land deeds or titles for the land they have been cultivating for generations. Arrivals of large, capital-intensive projects in remote areas have been successful in most cases to alienate the local inhabitants from their living environment.

6. Unearthing gemstones in Orissa

Gemstone mining and trade in Orissa has been till now entirely in the unorganized sector. In the western and southern parts of Orissa there is a flourishing
illegal trade in gemstones. In Boden block of Nuapada district, in several villages, land has been dug up for garnets and sapphires. Once stones as they are called in the local parlance are discovered, it's like 'gold-rush'.

Slightly richer villagers set themselves up as small buyers and the others, depending upon the nature of deposits sometimes concentrate almost entirely on this activity.

The actual activity of mining gemstones is highly time consuming and requires hard labour, which ultimately yields very meager returns for the miners. Men and women, often children are engaged in this work. It involves digging for hours, laboriously straining the mud and rubble and then washing in water to extricate small pieces of gemstones.

The touts are always around to keep a tab on the nature of production each day. Generally a handful of small garnets get sold right at the site of extraction for amounts like Rs. 10 to 15. And if one happens to need money immediately, then the prices are even lower.

The middlemen collect the stones, grade them and take them to the bigger traders in the nearby towns, from where it goes all the way to Rajasthan to be processed and sold. Once an area is deemed exhausted, people move on.

In Boden, large areas dug like trenches and abandoned are a common sight. In a structure that is seemingly unorganized, strict mechanisms of buying

Thuria is a small village in the Similiguda block of Koraput district.

It started figuring in the local news due the high frequency of deaths in the area. Ten people were murdered within a week. The village shows signs of sudden prosperity. Each house has a number of motorbikes. Some houses have as many as ten. When we reached the village we found very few people at home. Almost the entire village was away digging for stones in the hills.

Some people had found gemstones called 'Cat's eye' in the area. One entire hill had been stripped of vegetation. It looked like a wound among the densely covered neighbours. At least two hundred people were digging on that hill. There were many women, children, motorbike wielding petty buyers and middleman. Eating joints, teashops and makeshift shelters have come up. The whole place was in a frenzy of activity. The local MLA's brother had set himself up as a major buyer. He was also hiring out bikes and jeeps to people who were interested in the deal. The crime rate had shot up with the influx of outsiders and high monetary transactions. The people in the village didn't look any richer though.

and selling operate. So each area has its group of middlemen and informers. It is not so easy to get information about high value stones like diamonds, which are also found occasionally. These transactions take place quietly. Since the activity is illegal, the police are also around to take their share of the loot. So some of the money earned has to be used for bribing the police

Panning or digging for gemstones is just another form of livelihood for the people. Another output of the economic systems with predetermined low returns, from almost every form of activity performed by a certain section of people. A high value commodity like gemstones is unable to meet basic wage needs of people at its source.

The Orissa Government is likely to come out with a gemstone policy in a short time. However, looking at the various transactions undertaken lately in case of precious minerals like gold and diamonds, it is quite expected that thigh investment projects with large foreign equity would get priority. Large areas will be parceled of as leases to big foreign concerns who would then probably use high phonology extraction methods. Either ways, the deal is unlikely to change for better for the local inhabitants.