

# Gurdeep Singh, David Laurence and Kuntala Lahiri-Dutt (eds). Managing the Social and Environmental Consequences of Coal Mining in India. Dhanbad: The Indian School of Mines University, pp. 333-344. Mines, Mining and Displacement in India

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With globalisation, mining has become an important source of investment and profit for the private sector. Mining-induced displacement and resettlement (MIDR) that was already a problem has thus become a major risk from the point of view of social sustainability. An effort will, therefore, be made in this paper to look at MIDR in the past and future trends. After a short discussion on the global scenario, it will look at the national scene on land and displacement and review the MIDR situation. The mining scenario, like the rest of the present economy is linked to globalisation. It will, therefore, be a crucial factor in the analysis

#### The Global Scenario

No global survey has been made of the scale of MIDR. The little information available points to high displacement in the past and a rising trend for the future as rich mineral deposits are found in areas with relatively high density of politically powerless populations, low land prices because of the backwardness of the area, poor definition of land tenure and open-cast mining. In every country including India, most persons affected are tribal and other indigenous peoples. (Downing 2002: 5-6). Higher displacement will also result in greater impoverishment of the displaced. Even the World Bank acknowledged this problem when it said in its Group's policy on involuntary resettlement (Operational Policy 4.12, approved 23 October 2001):

Bank experience indicates that involuntary resettlement under development projects, if unmitigated, often gives rise to severe economic, social and environmental risks; productive systems are dismantled, people face impoverishment when their productive assets or income sources are lost; people are relocated to environments where their productive skills may be less applicable and the competition for resources greater; community institutions and social networks are weakened; kin groups are dispersed; and cultural identity, traditional authority, and the potential for mutual help are diminished or lost

Thus, the mining affected face problems similar to those of persons displaced (DP) or deprived of sustenance without physical relocation (PAP) by other types of projects but its environmental impact seems to be greater than that of other projects. Displacement specialists (e.g. Cernea 2000: 14-18) speak of its impact as loss of physical income earning assets such as homes, productive land, jobs and subsistence resources and non-physical assets like community support, cultural sites, social systems, identity and mutual help mechanisms. Food insecurity,

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poor access to health care and education and social disruption are among its impacts. The tribal and indigenous peoples particularly women suffer more than others do (Pandey 1998a: 35).

It also means that, the social impact of mining goes far beyond loss of land. "Failure to mitigate or avoid these risks may generate "new poverty." as opposed to the "old poverty" that peoples suffered before displacement. Certain groups—especially indigenous peoples, the elderly and women—have been found to be more vulnerable to displacement-induced impoverishment risks." (Downing 2002: 6). Its greater negative impact on women known already a century ago motivated the International Labour Organisation to evolve the *Convention concerning the Employment of Women on Underground in Mines of All Kinds* (C 045) on 21<sup>st</sup> June 1935. The hazard of child labour resulted in the Convention concerning the Minimum Age for Underground Work (C 123) on 22-6-1965.

These and other measures and policies emanated from the realisation of the need to prevent further impoverishment of the already poor in the mining areas. Studies and experience of involuntary resettlement and rehabilitation by mining during the last four decades show the near impossibility of restoring the DP/PAPs to their former economic and social condition not because of financial constraints alone. They have failed because a majority of them are tribal-indigenous people and most mines are in the administratively neglected "backward" areas whose inhabitants have very little exposure to the formal economy into which they are pushed. But the backwardness of these areas reduces the cost of land and makes it economically viable for the project (Singh 1989: 96).

A second reason of this failure is the assumption that compensation suffices to rehabilitate a displaced economy and community. The problem goes far beyond compensation to the failure to realise that development itself may cause poverty in a traditional society. "The local inhabitants, due to the introduction of these projects in their areas, gradually lose their control over the resources they had once access to on the one hand, and, they are shifted to a pattern of an economy with which they are not acquainted on the other. While their resources are exploited intensively by the project authorities, they are not able to enjoy their benefits because the process of development is heavily loaded against them" (Pandey 1198b: 2).

### 1. Land Under Mining

Thirdly, the size of the mines today is bigger than in the past. For example, coal is India's most important mineral catering to a third of its energy needs. The size of its coalmines has grown from an average of 150 acres in the 1960s to 800 acres in the 1980s (Fernandes and Asif 1997: 74-75) and to some 1,500 acres today because the last 3 decades have witnessed a shift from underground to opencast mines in order to exploit lower quality coal (Rao 1990: 62). Open cast mines require more land and displace more persons but create fewer jobs than underground mines do. Also the bigger size of other mines causes higher displacement. For example, the Freeport mine in Indonesia caused 15,000 DPs. They were 20-30,000 in the Ghana Tarkwan gold mine and 37,000 in those of southern Africa (Downing 2002: 5).

The Geological Survey of India estimates that on 1<sup>st</sup> January 2000, India's coal reserves down to a depth of 1,200 meters were 2,11,593.61 million tonnes. Of this total 10,778.58

million tonnes are proven reserves, 10,894.15 indicated reserves and 4,235.81 are inferred reserves (IBM 1998: 107). Its exploitation results in much land loss and displacement. It is difficult to get data on the land used by each mining company but Table 1 gives data on that owned by Coal India Ltd (CIL) in 2005. A later section will give somewhat reliable data from studies done on "Development-Induced Displacement in India 1947-2000". Most information is only after 1970 or even the 1980s. For what precedes the 1980s one has to depend on estimates. So one can only say that at least as much as that given in Table 1 has been acquired prior to 1980. Besides, mechanisation of the mines during the last two decades reduces employment. Till the mid-1980s, the T. N. Singh Formula 1967 had stipulated that industries and mines give a job each to the families they displaced. Since they began to mechanise their operations from the mid-1980s SCOPE abandoned this Formula in 1986 (MRD 1993).

One can see its impact, among others, in the jobs given by CIL. It gave a job each to 11,901 (36.34%) of the 32,751 families displaced 1981-1985 (Govt of India 1985). But till 1992 immediately after mechanisation in the Upper Karanpura Valley of Jharkhand the first 5 of the 25 mines that were to have 1,00,000 DPs, gave a job each to 638 (10.18%) of the 6,265 families displaced (BJA & NBJK 1993: 36). With traditional transport the NALCO mines activated in the late 1980s in Koraput district, Orissa would have created 10,000 jobs and rehabilitated the 50,000 DP/PAPs of the Upper Kolab dam and 6,000 of the NALCO Plant in the same district. Their income would have created more indirect jobs. But the mines were fully mechanised and created some 300 skilled and semi-skilled jobs that went to outsiders since its predominantly tribal PAPs lacked the skills they required (Pattanaik and Panda 1992).

Company	Total Land Acquired *	Total Tenancy Land Acquired	Tenancy Land ir Possession		
Eastern Coalfields Limited (ECL)	13093	12022	9145		
Bharat Coking Coal Limited (BCCL)	4280	3857	1937		
Central Coalfields Limited (CCL)	35736	12758 .	4883		
South Eastern Coalfields Limited (SECL)	20538	12812	11873		
Western Coalfields Limited (WCL) ,	19785	17089	14330		
North Coalfields Limited (NCL)	15948	5612	5275		
Mahanadi Coalfields Limited (MCL)	19965	9180	4252		
North Eastern Coalfields (NES)	25041	41.47	41.47		
Total	154386	73371.47	51736.47		

This

development is intrinsic to liberalisation formalised hv economic the policy of July 1991. It allows up to 74% foreign investment in the exploration and mining of

diamonds and precious stones and 100% in the automatic route for processing of minerals and metallurgy. Efforts are being made to dilute the environmental laws to suit the needs of the private investors. Because of the adverse environmental impacts the World Bank that provides technical assistance to member countries, commissioned in 2004 a review of extractive industries but rejected the report presumably because it suggested, among others, that the Bank move out of this sector since it disrupts the life of the indigenous peoples (Kalshian 2007: 8-9).

Besides, since most minerals are in the tribal areas, the Centre has been trying to dilute the Fifth Schedule because of the Supreme Court judgement in Samata vs the State of Andhra Pradesh (civil appeal Nos. 4602 and 4602/97). It concerned land allocation to Birla Periclase in

a tribal area. In a majority judgement the court held that in AP the person includes the State and property includes prospecting for mining licences. It declared all transfers of prospecting licences to private companies void. Since it could go against the economic policy the Ministry of Mines, in its letter to the Committee of Secretaries (16/48/97-MV.VI dated 10<sup>th</sup> July 2000) said that if this judgement is followed, large tracts of land with bauxite in AP would never be exploited. It could also apply to other States and hamper mineral exploitation of the whole country. Based on the advice of the Attorney General it suggested amendments to the Fifth Schedule under Article 368 so as not to affect the basic structure of the Constitution. With this background an effort will now be made to make an estimate of land under mining in India.

#### Andhra Pradesh

In 1998 Andhra Pradesh had 1,22,301 acres (49,514.57 ha) on lease to mining companies, many of them private, all of them belonging to the 1980s and 1990s. They included 16,523.24 acres to Singareni Collieries, over 5,000 acres for granites and other stones and similar areas for limestone, fireclay, graphite and other minerals. 84,388 acres of it (69%) of it was private land, 29% common revenue and the rest forests (Fernandes et al. 2001: 54-56). The total land under mining is bound to exceed 200,000 acres.

The AP Ministry of Mines informs the investor that it is the second largest store house of Mineral Resources in India, that it has 48 minerals, that it produces minerals worth Rs 4,857 crores which is 8% of India's production of Rs 59,509 crores. The sector contributes Rs 770 crores to the State exchequer and brings in Rs 634 crores in foreign exchange. It has identified the mining sector as one of the growth engines for the overall development of industry and infrastructure. Minerals awaiting exploration include 700 million tonnes of bauxite, diamonds over 50,000 sq. km, gold in 11 districts, many types of beach sand, clays, petroleum and natural gas. The State envisages mineral projects with the participation and investment from the private sector and considers it basic to a boost to industrial production. Recent spectacular discovery of large quantities of natural gas in the Krishna-Godavari Basin is expected to lead to long-term contracts with reasonable prices (Taken from the website).

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#### Orissa

Western Orissa forms a continuum with the Northern Andhra and Jharkhand bauxite belt, most of it in its tribal areas. Major and minor metal deposits exist in 20 of the State's 30 districts but two thirds of them are in the tribal-majority Keonjhar, Sundergarh, Koraput, Jajpur and Mayurbanj districts and the non-tribal majority Jharsuguda and Angul districts. So mining can result in a cultural genocide if preventive steps are not taken to ensure their development. In reality MOUs are signed with various companies, including one of the biggest with POSCO of South Korea for mineral exploitation and industries. In 1995 the State had 579 leases on 281,187.27 acres (113,840.99 ha) of which 82,848.74 acres (33,542 ha) in 113 leases in Keonjhar, 135 for 62,708.36 acres (25,388 ha) in Sundergarh and 11 for 22,220.12 acres (8,996 ha) in Koraput, all three of them tribal majority districts.<sup>2</sup> The metallic ores for which leases have been granted are bauxite, chromite, iron, lead and manganese ore. The non-metallic minerals include asbestos, dolomite, graphite, kyanite, pyrophillite, quarts, various clays and sands, both industrial and non-industrial (Directorate of Mining and Geology 1996: 36-43).

Not all the land of the operational mines could be identified. For example, data could be got for only 2,334.83 acres (945.28 ha) that Mahanadi Coalfields (MCL) owned in 1995. But MCL was going to acquire 8,636.91 acres in the mid-1990s and more during the following years. Much of the land acquired in the past as well as what was proposed to be acquired is common or forest. For example, of the 8,636.91 acres mentioned above 4,095.09 acres (51.7%) were private against 2,499.61 acres (31.56%) revenue commons and 1,326.21 acres (16.74%) forest (MCL 1995: 3-12). Almost all the land that has been handed over to Utkal Aluminium near Kashipur, Rayagada district for bauxite mining is tribal commons (Padel and Das 2007: 25) so is the land used by the NALCO mines near Damanjodi in Koraput district (Fernandes and Asif 1997: 76). Of the 410,137.24 acres (166,047.47 ha) used by mining till 1995, only 68,328.86 acres (16.66%) were private, the rest being predominantly tribal commons and forestland (Fernandes and Asif 1997: 84). It shows the impact on their communities.

Data from MCL also show that, the State had by then issued notifications for private land but took a long time to part with common land even after allotting it to MCL. For example, in 1995, 51.43% of the private land that MCL had applied for was in its possession against only 19.87% of the revenue commons and 17.64% of the forestland (MCL 1995: 13). The State speaks of development as a public purpose but seems to take its own precepts seriously only when it comes to people's sustenance, not to what it owns.

#### Jharkhand

Jharkhand accounts over a third of India's coal, half of its mica reserves, 23% of iron ore, 34% of copper reserves and has other minerals like fireclay, manganese, uranium, kyanite and china clay (Areeparampil 1996: 26). Because of this abundance mining in Jharkhand began already in the 19<sup>th</sup> century. The Jharia coalmines belong to 1886, the Gurumahsini iron ore mines to 1911, Badampahar and Sulaipet to 1923, Noamundi to 1926, the mica mines in Hazaribagh and Koderma to the 1930s and the bauxite mines in Palamau and Lohardagga to the

<sup>&</sup>lt;sup>2</sup> Here we are speaking of leases, not the number of mines that are many more than this. For administrative purposes most companies count more than one mine as a single unit. For example Mahanadi Coal Ltd. Speaks of Orient 1 and 2 that are two mines as one unit.

1940s. In the late 1990s Jharkhand had 398 working mines on 409,883.24 acres (165.944.63 ha) but the total with the mining companies was 515,124.59 acres (208,552.47 ha).

Common with AP and Orissa is the slow disappearance of mica mines because of alternatives found for it. Many mica mines in Hazaribagh, Koderma and Giridih districts were closed down in the 1990s. Added to it is illegal mining, particularly of coal, much of it in the remote forest areas or on abandoned mines or those that have been declared unsafe by the Directorate of Mines. That accounts for the difference of more than 1 lakh acres between land under lease and the final total. Thirdly, only 35.7% of land under mining is private and the rest revenue commons or forestland (Ekka and Asif 2000: 61-62, 67).

### West Bengal

Mining has been a major activity of West Bengal for two centuries. Its only major mineral is coal but it also has some minor metals. The State accounted for 25.908.54 million tonnes or 12.24% of India's coal reserves or the fourth highest in the country, coming after Jharkhand, Chattisgarh and Orissa (IBM 1998: 107). The State had 114 coalmines in 1983 out of India's 498 (CMIE 1986: 93), most of them in Bardhaman, Malda and Purulia districts. Their number has declined since then but their size is bigger than in the past because of the shift to opencast mines at first and later globalisation and mechnisation that accompanies it.

Apart from coal, the State has acquired land also for minor metals like dolomite. Gazette notifications 1947-1990 show that from the 1980s there is a decline in the acquisitions for coal. The decline is true also of other development projects mainly because of labour unrest in the 1980s but the decline for mining seems to be because the minerals are nearly exhausted, not because of labour unrest. Because of poor maintenance of records, it is difficult to get all the information on land used for mining in the State. Gazette notifications show that 13,456.46 acres of private land and 1,440.92 acres of common land were acquired 1947-1990. Inquiries with various officials and other knowledgeable persons took us to around 30,000 acres used for mining in the 1980s and 1990s (Fernandes et al. 2006: 63).

In Orissa, Chattisgarh and Jharkhand much of the mining land is CPRs. In Orissa they are 30% of the land used for coal even in the non-tribal Talcher area of Angul district where the proportion of the CPRs is low. They are nearly 60% of the land on lease for non-coal mines in the tribal areas (Fernandes and Asif 1997: 74-75). In AP 30% of the 1,22,301 acres used by mines are CPRs (Fernandes et al. 2001: 57). Most coalmines of West Bengal are in its tribal areas so the CPR proportion is high. Its exact extent could not be got but it is clear that very little of it is private. For example, the Gazette notifications show that out of 13,456.46 acres of private land notified 1947-1990 only 2,900.38 acres are of 1981-1900. The rest was acquired 1947-1980 (Fernandes et al. 2006: 61). The remaining 27,000 of the 30,000 acres used for mining are CPRs. But Table 3 gives only what has been well documented.

#### The Northeast

According to a news item (*The Sentinel*, October 12, 2007), the Northeast has 395 million tonnes of coal deposits apart from uranium, petroleum, limestone and other minerals. Most coal is in Meghalaya and Assam. The petroleum deposits found by and large in Assam

have been exploited since 1901. Since they are getting exhausted, new areas are being explored. Moreover, since no university in the region has a course in mining, most employees of mining companies are from outside the region so there is resentment against them because of a feeling that they alienate the land of the local people but do not ensure any benefits to them. At the demand of the All Assam Students' Union (AASU) it has been decided to start this course at Mariani in Upper Assam (*The Assam Tribune*. October 14, 2007). For several years the Uranium Corporation of India has been trying to mine uranium in Meghalaya. It is mining some of it but is meeting with resistance from the people. Tripura has gas deposits.

The Gazette data show that only 105.47 acres have been acquired in Assam for mining till 2000 but mining leases in the State occupied 5,483.54 acres in 1991, of which 3,126.98 acres were on lease for 24 coalmines. According to the North Eastern Council website (www.nerdatabank.nic.in) 6,397.3 acres were

Table2: Mining Leases, Assam 2000

Minerals	No. of Leases	Area Acres			
Quartz	1	9.95			
Limestone	18	2241.14			
Coal	24	3126.98			
Total	43	5378.07			

on lease in Dibrugarh district in 2004 for coal and more in Sibsagar but it does not give the exact area in the latter. It says that 4,940 acres are being explored in the Dibrugarh-Sibsagar belt and that coal is available in Tinsukia, Karbi Anglong and N. C. Hills but does not say whether exploration has started. So we excluded these areas and put the land under lease for coal at 8,000 acres. In Assam too, it follows the pattern of fewer mines covering a bigger area.

There are 2 limestone leases in Assam and the area used for it has remained unchanged since 1991. There are 8 leases for crude oil, each of them of over 1,000 acres. The Nazira town has been built for this purpose. Not less than 10,000 acres are thus on lease for petroleum. Thus, all the minerals including petroleum have used not less than 20,251 acres. It is an underestimate but because of the refusal of the companies to part with accurate data we were forced to restrict ourselves to this total (Table 2).

## Goa

Much of Goa has a Pre-Cambrian rock formation. It has 23.55 MT of India's 176.48 MT (13.35%) manganese reserves and *in situ* deposits of 967.46 MT of iron ore of which 762.23 MT is recoverable, 362.56 proved, 200.26 probable and 199.41 possible (IBM 1997B: 74-78). Its iron ore deposits are 7.27% of India's total of 12,745 MT (IBM 1991: 5 & 19) and are found in pink phylite that resembles the shales in the Singhbhum-Keonjhar-Bonai region of Jharkhand and Orissa (IBM 1997b: 59-63). Also small amounts of minerals like silica are mined. In 1992 mining gave some 8.500 direct jobs and a similar number in its allied sectors (Kamat 1995a: 20-21). Mines are thus, an important sector of the State's economy but there are signs that some of them are being abandoned and that mining is facing a crisis.

For three centuries Portugal ignored opportunities to develop a major iron ore export market in Goa though that large mineral deposits existed was known at least from the 17<sup>th</sup> century. Only after Salazar assumed office did his regime, badly in need of revenue and anxious to justify its claim to retain Goa, began to develop the mines. In 1941 a sample consignment of 1,000 tonnes was made to Belgium. Regular exports to Japan began in 1947. Their speedy development after it was due to the concessions, low taxation on minerals and nominal import duty on mining machinery (Fernandes and Naik 2001: 10). The main features of the decree of September 20, 1946 that granted mining concessions in Goa are:

- 1. The concession was given in perpetuity. The Government's role was restricted to exercising supervision over the extraction of ores;
- 2. The right to a concession was patrimonial under the Portuguese constitution.

Such concessions were granted to around 600 private parties. After 1961, all new leases were brought under the *Mines and Minerals (Regulation and Development) Act, 1957.* About 80 leases were granted under it. The Goa government made several unsuccessful attempts to cancel the pre-1961 concessions. Finally the Indian Parliament enacted the *Goa, Daman and Diu Mineral Concessions (Abolition and Declaration of Mining Leases) Act, 1987* to abolish to treat them as leases under the corresponding Indian law, with retroactive effect from December 20, 1961. The owners challenged the Act in the Bombay High Court, Panaji Bench, and obtained a stay order. They could thus carry on mining operations but they have to go through the process required by law if their leases have to be renewed (Ecoforum 1993: 155). The Government has laid down the following conditions for their grant and renewal:

- The lessee is to compensate the owner or tenant or occupant of the land or property situated in the leased area or in its vicinity, that is damaged or disturbed as a result of mining operations or due to the flow of mining reject, slime or waste. The damage is to be assessed by the Collector, South Goa in accordance with the law. The lessee will also indemnify the Government completely against all claims that may be made in respect of any such damage.
- 2. The lessee shall obtain surface rights or consent of the owner or occupier of land before entering the land for commencement of mining operations.

Today over 11% of its land is on perpetual lease to private mining companies. Till 1989 the leases covered almost 500 Sq. km or 13.51% of Goa's landmass, some 350 sq. km of it on forestland. 41,955 ha or 11.33% of its land was under 526 leases for major minerals in late 1989, 268 of them on 22,645.11 ha for iron ore and 244 on 16,316.06 ha ferro-manganese or manganese. By 1994 the number of iron ore leases had declined to 220 and those of manganese to 176 covering 28,980.48 ha but many applications were processed for new ones, 93 of them in 1997 alone (Department of Mines 1998). In reply to Unstarred Question No. 578 of Shri Manohar Parrikar MLA, the then Chief Minister Mr Pratap Singh Rane told the State Assembly on 15<sup>th</sup> July 1998 that the State had 438 mining leases covering 28,349.63 ha. The Directorate of Mines and Industries states that in 1998 Goa had 372.75 sq. km of land under iron ore, ferromanganese and manganese leases but 253 leases covering 170.36 sq. km had been cancelled (Department of Mines 1998). Thus at least 542 sq. km of land i.e. 14.64% of the State's landmass was under mining leases at some time or the other.

Not all the leases are worked simultaneously. In 1983 Goa had 153 (88 iron, 65 manganese) mines and 165 in 1985 on 26% of the leased area (CMIE 1986: 93). In 1985 it had 165 working mines covering 26% of the concessions. In 1994 it had 396 leases under

operation, 220 of them iron ore and 176 manganese and the rest minor metals (IBM 1997a). Their number went down to 78 (42 iron 34 manganese and 2 others) in 1992 (IBM 1994: 242, 398 & 487) and 42 on 18,000 ha in 1996 (IBM 1997b) while leases covered 37,275.07 ha. In his reply to LAQ No. 578 Rane stated that 76 of the 438 leases on 5,718.9 ha were operational in 1998. Of the 21 leases covering 2,325.35 ha granted after 1965, four covering 1,423.2 ha were operational. That many leases are inoperative is seen also from the decline in production and area under working mines. Iron ore production, though lower than in the past, remained at a high 132.33 lakh tonnes in 1991-92 (Kamat 1995a: 20-21). In 1992-93 production was 294.4 lakh tonnes (IBM 1994). In 1997-98 it was 17,21,001 mt. Bauxite and manganese production seems to have declined more than that of iron ore, from 17,737 and 93,237 tonnes respectively in 1981-82 to 3,272 and 36,448 in 1991-92 (IBM 1994) and 12,110 and 26,867 in 1997-98.

But the decline in production is not proportionate to the reduction in their number because recent mines are bigger and their productivity is higher than that of the older ones. That brings in high profits but tends to be negative from the environmental and employment perspectives. Many mines have been abandoned but neither the officials nor the lessees gave its details. Some lessees stated that they never abandon a mine because the land reclamation that the law demands is costly. It can also create legal problems. Though the lease is in perpetuity, it is for a specific purpose. So the lessees are afraid that they will lose their right over it if it is abandoned. So they categorise non-viable mines as "unexploited". Afforestation is the mainstay of land reclamation. But till 1983 it covered only 50 ha and in 1993 it had gone up to about 200 ha. Most use the abandoned land as water reservoirs or fishponds or leave it fallow (Fernandes and Naik 2001: 33). But the fact remains that probably 10,000 ha have been abandoned.

#### An Estimate of Land Used

The above sections have shown the extent of mining land used in all the major mining States except Chhattisgarh, Maharashtra and MP. Table 3 gives the type of land used in the States from which information is available, most of it of the 1980s and 1990s and some from the 1970s. Since mining began long before it the area under the control of mining companies is much bigger than this, probably thrice as much. It also means that much of the land under their control belongs to the abandoned mines category. But as the Goa experience shows, the lessees are not ready to acknowledge it. Instead fertile paddy land has been acquired in the State in recent years on both sides of the Konkan railway. If all its plans go through, Goa may acquire 7.2% of its landmass for new projects when it is possible to use the abandoned land for new industries. Besides, two thirds of the land used in most States is tribal commons or forests. Rehabilitation of mining DPs is lower than that of the others. One sees no reason why abandoned land should not be used to rehabilitate their DPs.

Table 5. All Estimate of Early onder Mining in the 1990s in Some States Studied (in)								
State	Private	Common	Forest	NA	Total	Source		
Andhra	22019.43	14359.11	990.28		37368.82	Fernandes et al. 2001: 59		
Assam	42.70	3196.17*		8155.88	11394.75	Fernandes & Bharali 2006: 77		
Goa	18066	18818	17316		54,200	Fernandes & Naik 2001: 39		
Jharkhand	74562.35	63296.03	70694.09		208552.47	Ekka & Asif 2000: 67		
Orissa	27663.38	67465.09	70918.87		166047.34	Fernandes & Asif 1997: 84		

Table 3: An Estimate of Land	Under Mining in the	1990s in Some States Studied (ha	i)
	C		

W. Bengal	10121.56	1440.32*		10121.56 1440.32*		11562.38	Fernandes et al. 2006: 91		
Total	155810.32	168575.32	159919.24	8155.88	492460.76	* Revenue-forest common			
%	31.17	34.47	32.69	1.67	100.00	land division not got here.			

### 2. The Extent and Impact of Displacement and Deprivation

That is the backdrop of MIDR. It is more difficult to get data on the DP/PAPs than on land. Thus table 4 is an underestimate but gives an indication of the seriousness of the situation.

#### The Extent of Displacement

Table 4 shows that it was difficult to get even the total of the DP/PAPs, much worse of their category. As Table 3 shows, much of the land used is CPRs while Indian land laws going back to the colonial age recognise only individual ownership. The CPR dependants who have lived on that land for centuries before this law was enacted, are considered encroachers. Many of them are thus evicted and are not counted among the displaced (Ramanathan 1999: 19-20).

In Goa many must have moved out of the area when mining activity was at its peak in the 1980s. Others from within and outside Goa migrated to these areas. So mining settlements grew, most of them temporary or semi-temporary (Fernandes and Naik 2001: 23-24). One does not know the number they displaced. Since most mines are in the thinly populated *ghat talukas*, it was low. The limited information in Assam shows that Bensali Coal in Sibsagar district had 5 DPs and 10 PAPs on 2.91 acres (Deputy Commissioner, Sibsagar 1987). The partial data on much of the land gives the same density of 1.7 DPs and 3.4 PAPs. Thus, the 8,000 acres used for mining would have caused 13,680 DPs and 27,520 PAPs or a total of 41,200. It is an underestimate but in the absence of other data one has to limit oneself to it. An ongoing study in Meghalaya shows that coal mining has displaced several thousands but it is difficult to come to an exact figure since much of the land is community owned. So it is mined through an informal understanding with the community or individual owners.

State	Years	Tribals	Dalits	Others	NA	Total	Source
Andhra	1980-95	NA	NA	NA	100541	100541	Fernandes et al 2001
Assam	80-2000	NA	NA	NA	41200	41200	Fernandes & Bharali
Goa	1980s	NA	NA	NA	4740	4740	Fernandes & Naik 01
Gujarat	80-2000	NA	NA	NA	4128	4128	Lobo & Kumar 2007
Jharkhand	1980-95	83543	63352	220076	00	402882	Ekka & Asif 2000
Orissa	1960-95	150000	45000	105000	00	300000	Fernandes & Asif 97
Kerala	1990s	NA	NA	NA	78	78	Muricken et al 2003
W. Bengal	60-2000	2459	99244	4373	311579	418061	Fernandes et al. 2006
Total		236002	207596	329449	462266	1571630	

Table 4: A Con	servative Estimate	of Mining-	Induced	Disp	lacement
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In other States too, limited data on displacement and deprivation could be got only from the 1980s. The initial figure of 2.55 million 1951-1900 arrived at from secondary sources (Fernandes 1998: 231) is an underestimate. Table 4 based on primary data-based studies gives a little over 1.5 million mining DP/PAPs in the 1980s and 1990s in a total of 60 million DP/PAPs of all the projects 1947-2000 (Fernandes 2007: 204). It does not include Maharashtra, MP and

Chhattisgarh that have high deposits. Many others are up to 1995. When these States are studied and data on the others updated, one can expect the number 1947-2000 to be 5 million.

### Displacement, Jobs and Rehabilitation

The studies also show that rehabilitation is weak by all the projects but it is lower by mines than by others. Orissa has resettled 35.27% of all its DPs (Fernandes and Asif 1997: 135), AP 28.82% (Fernandes et al. 2001: 87), Kerala 13.8% (Murickan et al. 2003: 185-189) 1951-1995, Goa 40.78% of 1965-1995 (Fernandes and Naik 2001: 62), West Bengal 9% (Fernandes et al. 2006: 123-124) and Assam the DPs of some 10 projects (Fernandes and Bharali 2006: 109) 1947-2000. An alternative to resettlement is jobs. As stated above, till the 1980s CIL used to give some jobs but their number has declined. Even one job per family is not an alternative because after land alienation the remaining family members do not have resources for self-employment. Possibly because of fewer jobs, CIL changed its norms for giving jobs. In what later became Mahanadi Coal Limited in Orissa, in the 1980s the norm was a job given for 3 acres of land acquired (Fernandes and Raj 1992: 33). In parts of Jharkhand it was changed to 2 acres if the person was a matriculate. Such jobs went by and large to young men from the dominant castes even in tribal majority districts because they alone had *patta* land and had access to high school education (Sherman 1993).

These and other cases point to the neglect of the DPs. It is seen also in the ambiguity towards this scheme. The World Bank is reported to have felt that CIL's inability to deal with the DPs was making it less attractive for capital markets since providing inheritable employment to displaced families resulted in a sustainable economic liability but its failure to rehabilitate the DPs was a social liability. So the "World Bank required a distinct \$US 63M Coal Sector Environmental and Social Mitigation Project (CSESMP)—known as the Coal India Rehabilitation Project (CIRP)—as a condition for CIL's obtaining a \$US 500M loan. A large part of the CSESMP was a pilot project that helped CIL implement appropriate policies for environmental and social mitigation of MIDR and test the effectiveness of these policies on 25 of its 469 coalmines" (Downing 2002: 5; http://www.worldbank.org.csesmp/).

Also the CIL rehabilitation policy (CIL 1994) seems to be its outcome. What is said of CIL is equally true of other mines. In fact, CIL has given more jobs to its DPs than most others have done. It has also resettled some till 1985. However, after liberalisation, profit has attained greater importance than in the past and the social component has got weak in the economy as a whole. The loss of jobs is only one of its signs. Its other face is the demand from private companies for more mining land particularly in the tribal areas of Jharkhand, Orissa and Chhattisgarh. Thus, there will be more displacement in Middle India than in the last 60 years, much of it tribal but their rehabilitation schemes are weak (IWGIA 2004: 314).

### The Impact of Displacement

Its result is impoverishment. Most farmers have become daily wage earners, their income has declined by more than half, over 50% have gone below the poverty line and pulled children out of school in order to turn them into child labourers. Many have taken to crime or prostitution. Drunkenness as a coping mechanism has increased so has wife beating.

Respiratory and malnutrition based diseases like tuberculosis are prevalent. Many DPs fill the slums but are evicted from them in order to keep the city beautiful. Such impoverishment is seen in landlessness as well as in joblessness that are two of the impoverishment risks. Then follow others risks like homelessness, food insecurity and health risks (Cernea 2000: 14-17).

Landlessness takes the form of downward mobility from large to medium landholders, from medium or small to marginal and small and marginal farmers to landless. It has a castetribe as well as a gender dimension. In Orissa, for example, among the mining displaced families, 16.7% of the tribal and 13% of the Dalit DPs became landless against 3.6% of the general castes (Pandey 1995: 180). In AP among all the DPs including those of mining, landlessness rose from 10.9 to 36.5% (Fernandes et al 2001: 112-113) and in Assam from 15.56 to 24.38% (Fernandes and Bharali 2006: 188). The average area cultivated declined, for example in Assam from 3.04 to 1.45 acres per family. Also support mechanisms such as ponds, wells, poultry, cattle and draft animals that supplement the farm income decline (Bharali 2007).

Joblessness takes two forms viz. lower access to work and downward occupational mobility. In AP, the proportion of cultivators among the DP/PAPs declined from 83.72% 41.61%. Besides, 45% of the cultivators became landless agricultural labourers or daily wage earners (Fernandes et al. 2001: 112-113 & 141). In West Bengal access to work declined from 91.02% to 53.18% (Fernandes et al. 2006: 203) and in Assam from 77.27% to 56.41%. 50% of the cultivators became daily wage earners or domestic or other unskilled workers (Fernandes and Bharali 2006: 165 and 188). In Orissa access to work among the mining DPs declined from 89.3% to of 57.5%. The shift was much greater among the tribal DPs because very few of them own *patta* land so CIL did not give them a job (Pandey 1995: 182).

The situation is expected to deteriorate with liberalisation to which mechanisation is intrinsic. The International Labour Organisation estimates that 12 million jobs were lost in India during the first six years of liberalisation (VAK 1997: 167). It includes the loss of jobs in mining because of mechanisation mentioned above. Besides, most skilled jobs go to outsiders since very few land losers have the skills they require. The data given on Talcher and Jharkhand show that the tribals and Dalits suffer the impact of joblessness and downward occupational mobility more than the others do. Another recent major change is separation of the industrial from the mining area. An effort was made during the last few decades to have the industry or thermal plant close to the mines. It gave the displaced persons a few jobs, most of them exploitative, meant for sheer survival. Even that possibility disappears with the separation of the two and with mechanisation. The communities of the mining areas are displaced and abandoned without even the minimum required for survival.

#### Impact on Women and Children

Displacement also has a gender dimension. The whole family suffers the impact of joblessness, reduction in income and of the move below the poverty line. But women and children feel its ill effects more than men do. For example, in the absence of alternatives, 56% of the displaced families in Assam and 49% in West Bengal pulled their children out of school to turn them into child labourers. Because of the trauma of forced displacement, others take to crime. Once the project alienates the land that was the foundation of their relatively high status,

tribal women have lower access to work than men do. So many of them spend their time gossiping or drinking as we noticed even in a rehabilitation colony in Orissa. When men waste money on alcohol, women try to maintain their families by selling their bodies since that is the only asset they own. Domestic violence increases, so do malnutrition based diseases such as tuberculosis (Fernandes and Raj 1992: 153-156).

Domestic violence and drinking existed in the past too but have increased after it. Alienation of land and forests deprives women of the resources that met the family's food, water and other needs but their role of providing for these needs remains unchanged. They have to attend to them with it with reduced resources (Ganguly Thukral and Singh 1995) particularly because after displacement joblessness is higher among women than among men. For example, a study in the coalmines of Singhbhum district of Jharkhand shows that in the past too, displaced women who wanted to work were forced to take up low paid unskilled employment. But they got at least food for their survival. Even that possibility has disappeared with mechanisation. Besides, the coming of mines changes the economy of a village drastically. The villagers were used to a barter economy in which women played an important role. They have now to compete with the salaried class to buy food in the market with no control over its price. This combination of landlessness, joblessness and lack of exposure to the market economy reduces women's access to food. Malnutrition is one of its consequences (George 2002: 17).

If jobs are given in a project they go almost exclusively to men. It reduces women to being housewives alone dependent on the husband's single salary. But for exceptions, women who want to work have to be satisfied with unskilled daily wage labour. Tribal women who are deprived of the CPRs on which their work and relatively high status depended, experience downward economic and social mobility. Many displaced men and women cope with this reality by internalising the dominant ideology. For example, because of the influence of consumerist values that accompany the project, men spend much of their income on clothes and entertainment and reduce the share of the family. Hence, even when they earn a higher monetary income than in the past the real income accruing to the family declines. When less food is available, many follow the dominant custom of the woman eating last after feeding the elders, men, boys and girls in that order. In case of shortages women and girls live on gruel as studies of the DP/PAP in Orissa and the Delhi slums show (Fernandes and Raj 1992: 153-155).

Another facet of internalisation of the gender ideology is the attitude towards unskilled work. Some men whom the project employs as maintenance staff do not want their wives to do domestic or other unskilled work because "it is against an office worker's dignity to have his wife doing menial work". Even women internalise the ideology of their place being in the kitchen and of not being intelligent enough for skilled work (Menon 1995: 101). In exceptional cases as at Bhilai, some women had permanent jobs while men were daily or temporary workers. When mechanisation reduced jobs one witnessed frequent cases of the project luring the man away with the offer of a permanent job far away. The woman was thus compelled to give up her permanent job "voluntarily," and accompany her husband (Sen 1992: 392-394).

#### Mining and Environment

Another area of concern is the environment. This paper will not dwell much on it but will give only a few examples such as the study of The Energy Research Institute (TERI 1997) of some 520 sq. km in Goa. It concluded that out of 3,350 ha under mining and associated activities, 1,300 ha were under dumps and it resulted in widespread environmental degradation. They found evidence of air and water pollution in much of the mining area and the surrounding villages, especially a high concentration of suspended particulate matter. Wastewater and runoffs from dumps containing both dissolved and suspended solids pollute the rivers, streams and other water sources throughout the year but adequate control measures are lacking.

It is reported from Singhbhum district, Jharkhand that the coal towns of Megahaluburu, Kiriburu, Gua and Noamundi with a population of some 20,000 persons lack drainage and dump their effluents in the surrounding villages and sewage in the rivers and rivulets, thus polluting them (George 2002: 17). Also studies in Chhattisgarh show the same trend but for brevity sake we will not dwell on them other than to say that environmental degradation is an ongoing process and has an impact on people. The dust, noise and water pollution force the residents to leave the area when their health deteriorates or land becomes infertile. The number of such indirect DPs is substantial but no way has been found of counting them. Besides, legally they move out of their own volition so they are not considered DPs though the project forces them to move out (Ganguly Thukral 1999). For example, in the Talcher coalmines in Orissa, many residents told us that they were planning to move out because they could not live amid the dust and the noise of constant explosions (Fernandes and Raj 1992: ).

The second process resulting in environmental degradation is the transition to destructive dependence. Communities that have for centuries used the forest, water and land resources in a sustainable manner change their culture because of impoverishment. For sheer survival they make a transition from constructive to destructive dependence on the source and destroy or overuse it. For example, a majority of the tribal and other forest dwellers have started cutting trees for sale as firewood. Fishing communities have given up traditions that restricted fishing in certain seasons or controlled the extent of fishing (Bharali 2007).

#### Conclusion

This paper is a bird's eye view of land acquisition and displacement by mining. Its limited data show that land acquisition has been high, particularly of the tribal and other CPRs. A large number of their dependants were not counted till recently. So one does not know their exact number. But it is clear from the studies that their numbers are high and that they feel the negative impacts of displacement and environmental degradation more than the others do. Women feel it more in every community particularly because the number of jobs has declined and they go mostly to men from the dominant castes. So the subalterns in general and women in particular are ignored. Poverty is bound to grow if corrective measures are not taken.

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