

COAL MINING OPERATIONS IN ORISSA (Sample area : HINGULA OCP) : ANALYSING PROBLEMS OF LAND ACQUISITION, RESETTLEMENT AND REHABILITATION

Ruma Ghosh Dastidar

Associate Professor, Department of Political Science

It cannot be denied that development projects are a crucial factor in the upward mobility of a nation and these projects have ranged from the conventional to non-conventional resource mobilization. In fact there are numerous instances worldwide where mining projects have been encouraged for the development of the local communities through the generation of employment and economic well-being (Ejdemo and Soderholm, 2011; McMohan and Remy,2001; Stilwell et.al,2000; Ye, 2008; Brunschweiler,2006). It is generally believed that mineral rich backward regions of the world should invest more in mining activities in order to remove poverty and destitution. Mining projects have also generated non-mining related employment through estimated multiplier effects. Based on the review of literature both in the global and the Indian perspective so far it could be inferred that mining is an important economic activity and inevitably forms a major edifice upon which the overall development of any economy with natural resources rest. Nonetheless, on the contrary, there exist numerous studies which testify that the countries having high mineral dependence and natural resource abundance tends to have lower economic performance and social well-being (Torvik,2009, BJORVATU and SELVIK, 2007, YUXIAN and CHEN 2011, as discussed in Saswat Kishor Mishra and Padmanabha Hota, Mining, Environment and Human Being: Case of Odisha). Popularly referred to as the ‘resource curse theory’ in development literature the under-rate of development was evident in countries like Bolivia, Mexico and Venezuela and other Latin American Countries despite being abundant resource countries (Sachs and Warner, 1999).

With globalization, mining has become an important source of investment and profit, for the public as well as the private sector. However as a result of these projects, development discourse has come to be inevitably linked to the question of displacement and resettlement (MIDR), the two issues which have emerged as a major risk from the point of view of socio-economic sustainability.

The World Bank in its Group Policy on Involuntary Resettlement (Operational Policy 4.12, approved 23rd Oct. 2010) pointed out :

“Bank experience indicates that involuntary resettlement under development projects, if unmitigated, often gives rise to severe social, economic and environmental risks: productive systems are dismantled; people face impoverishment when their productive assets or income sources are lost; people are relocated to environment 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 people face problems similar to those of persons displaced 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 (Michael Cernia , 2000). It also implies that the social impact of mining goes far beyond loss of land. Various policies have emanated from the realization of the need to prevent further impoverishment of the poor in the mining areas. Studies and experiences of involuntary resettlement and rehabilitation packages offered by the mining authorities during the last few decades show the near impossibility of restoring the DP/PAPs to their former economic and social conditions (**Singh**, 1989).

The World Rainforest Movement in a Report published in 2004, makes a comprehensive and poignant review on the social and environmental impact of mining (including coal mining) at the international level. Interestingly, most of these reports and studies limit their extent to the problems associated with coal mining with limited emphasis on the pros and cons of land acquisition policies. Coal , is India’s most important mineral catering to a third of its energy needs. The size of its coal mines has grown from an average of 150 acres in the 1960s, to 800 acres in the 1980s and to some 1500 acres today because the last three decades have witnessed a shift from underground to opencast mines. Opencast mines require more land and displace more persons but create fewer jobs than underground mines do.

The Geological Survey of India estimates that on 1st Jan, 2000, India’s coal reserves down to a depth of 1200mts was 2,11,59361 million tonnes. Its exploitation results in much land loss and displacement. Coal India Limited (CIL), the largest coal mining undertaking in India and its subsidiaries, used land to the extent of 73371.47 area in hectares resulting in multiple social and economic liability. (Singh et al., 2007). 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. In Orissa , for eg., among the displaced families, 16.7% of the tribal and 13% of the Dalit DPs became landless against 3-6% (**Fernandez et al.**, 2001) , and in Assam from 15.56 to 24.38% (**Fernandez and Bharali** 2006) . The **International Labour Organizations** data on Talcher and Jharkhand shows that the tribals and Dalits suffer the impact of joblessness and downward occupational mobility more than the others do. **Vasundhara** (2006), an NGO, working amongst the PAPs in Orissa, reported on the direct and indirect impact of mining on the health of the mining community in general and women’s health in particular in the Talabira mines , it effects the environment and ecology of the region.

The Final Report of Social Mitigation Project for Rehabilitation and Resettlement in Coal Sector Displacement through FCPI of PAPs and IPDPs, June 2002, by YARR, Orissa identified the constraints of policy implementation of the mining authority. Emphasis has been laid on the question of land acquisition and problems relating to land access and conversely the socio-political and economic sentiments underpinning the PAPs.

According to a report published in the **Business Economics (July 31, 2011)** -

‘In seven years between, 2000-01 and 2007-08, while the total reporting area for land utilization had increased by 4.9 lakh hectares, the area under non-agricultural use had increased 20.3 lakh hectares. Area under non-agricultural uses included all land occupied by buildings, roads and railways or under water, eg. rivers and canals, and other land put to uses other than agriculture. The share of land under non-agricultural uses in total reporting area has gone up from 7.8% to 8.5% during the period.’

This is to note that the rise in land under non-agriculture uses has basically resulted in the reduction of the quantum of agriculture land. It was further reported that the share of net sown area in total reporting area has declined from 46.3% in 2000-01 to 46.1% in 2007-08. This decline indicated that the share of land available for cultivation itself has declined. This decline was not caused by the rise in current fallow (land that is not cultivated in a particular or current year.)

II

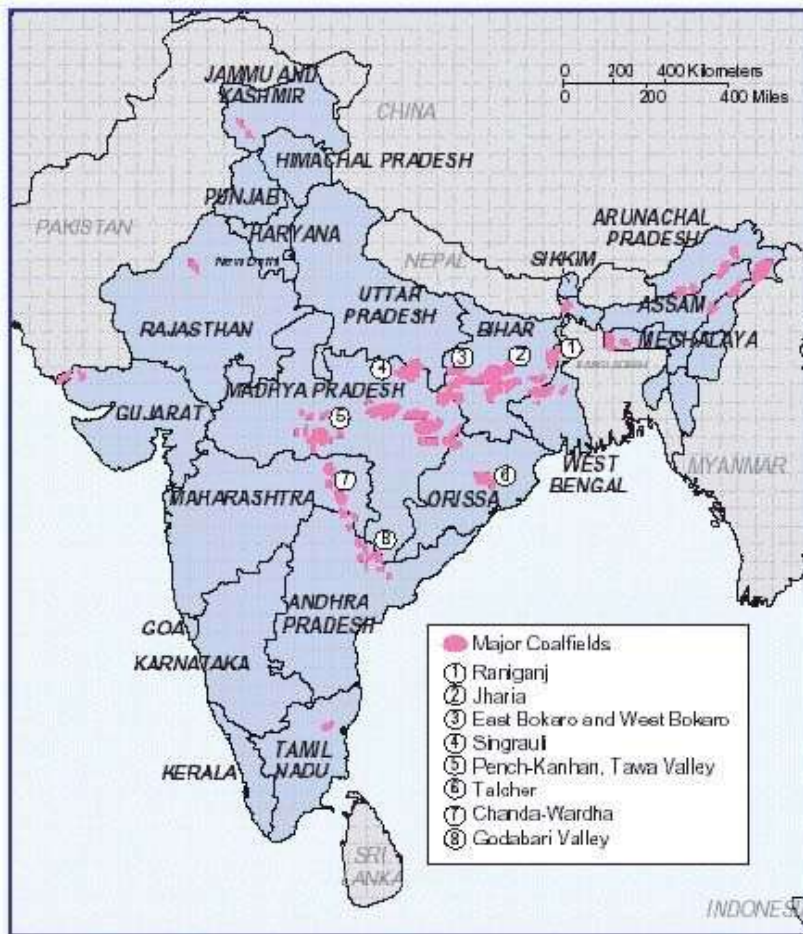
The most abundant and available fossil fuel on earth, coal (essentially Carbon) has been mainly used as a combustion fuel for generations. Coal of all types (lignite, bituminous and anthracite) contain Sulphur to a certain degree. Though Sulphur is considered to be one of the worst forms of pollutants and causes extensive damage to human health and vegetation, the use of coal continues to gain advantage in the industrial sector specially in such heavy industry such as iron and steel making. Moreover despite other sources of energy, coal is still the prevalent mode of domestic consumption.

Until recent times major portion of coal came from the underground mines. However at present there are a large number of opencast mines providing for nearly 80% of coal supply in the country. In fact, India has a long history of coal mining beginning since 1774, with M/S Sumner and Heatley of the East India Company operating in the Raniganj coalfield area along the Western bank of river Damodar. It was the introduction of the steam locomotive in 1853 that provided the fillip for increased

production of coal on a commercial basis. Production level reached to 30mts by 1946 from 29mts in 1942. The need for a systematic and coordinated effort towards a scientific development of a coal industry was realized after the country received independence. The setting up of the National Coal Development Corporation (NCDC), a Government of India Undertaking, was the first in the direction.

However unscientific mining practices, poor working conditions of labour and inadequate capital investment in most of the private owned coal mines required a reassessment of the Government’s policy in this regard. In fact from its inception, commercial coal mining in India had been governed by the requirements of domestic consumption specially of the steel industry. Under such circumstances the nationalisation process was undertaken in two phases – first, with the coking coal mines in 1971-1972 and then with the non-coking coal mines in 1973. Presently the Coal Mines (Nationalisation) Act, 1973) is the central legislation determining the eligibility of coal mining in India.

The coal deposits workable under the current techno-economics of mining of the country occur in two distinct stratigraphic horizons : Gondwana and Tertiaries. The total spread of Gondwana formations in the country is about 64000sq.km. Barring a few isolated basins , which are not considered economically viable at present, the aerial covering of 57 Gondwana coalfields is about 49470 sq.km. out of which 36290 sq.km is prognosticated to be coal bearing . Excluding the regions of coal fields which have deep seated coal deposits the potential area which may contain coal seam is about 15101 sq.km. The total basinal area of 14 tertiary coal fields is about 1650 sq.km.out of which about 1477 sq.km. area is prognosticated to contain coal seams. However only 180 sq.km. area is currently considered as economically viable.(CIL Report, 2014),



Coal India Limited is the single largest coal producing Company in the world and the largest corporate employer with a manpower of 3,71,546 (as on 1st April 2012). As per the Director’s Report, CIL, 2012, CIL operates through 81 mining areas spread over 08 provincial States of India. Coal India has 467 mines of which 273 are underground, 164 opencast and 30 mixed mines. CIL

further operates 17 coal washeries (12 coking coal and 5 non-coking coal) and also manages 200 other establishments.

COAL PRODUCTION AND DEMAND

Of the total land area of 3.29 million sq.km (India) about 16,000sq.km i.e 0.45% area is coal bearing. Out of this coal bearing area, active coal mining area is 2500 sq. km. Maximum land degradation in coal mining is caused by open cast mining which is presently confined to 20% of coal bearing land. Thus the area where land degradation has taken place and is likely to take place is around 0.2% of the land mass. Surface mining has soared considerably accounting for nearly 160 million tonnes production of coal per annum. Of the 588 mines in India, 355 are underground, but opencast pits account for 75% of production and employs only 16% of the total mining work force. Importantly though productivity is higher in the open cast sector, the pace of growth cannot be sustained for long, since stripping ratios will increase and mining operations run into land access and other environmental problems.

According to the Provisional Coal Statistics (2011-12) : (Source : Provisional Coal Statistics (2011-12), Coal Controllers Organization, Govt. of India, Ministry of Coal, Kolkata)

Overall coal demand and supply as estimated by :

The Planning Commission of India had assessed the demand of raw coal for 2011-2012 as 696.03 million tonnes (MT) (including colliery consumption and export).

Against this demand, indigenous supply was expected at 559.00 MT and materialization through import was to be at 137.03MT.

Actual supply of raw coal was at 535.152MT (not including colliery consumption) from indigenous sources, whereas import upto Oct.2011 is 69.491MT, comprising of 18.190MT of coking and 43.300MT of non-coking coal, during the year 2011-2012.

I INVENTORY OF GEOLOGICAL RESOURCES OF COAL IN INDIA As a result of exploration carried out up to the maximum depth of 1200 metre by the GSI, CMPDI, SCCL,

As on	Geological Resources of Coal			
	Proved	I Indicated	I Inferred	Total
11.4.2007	99060	120177	38144	257381
11.4.2008	101829	124216	38490	264535
11.4.2009	105820	123470	37920	267210
11.4.2010	109798	130654	36358	276810
11.4.2011	114992	137471	34390	285862

Source : <http://www.coal.nic.in/reserve2.html>

MECL, DGM(Maharashtra) and DGM(Chhattisgarh) etc., a cumulative total of 2,93,497 Million Tonnes of Geological Resources of **Coal** have so far been estimated in the country as on 1.4.2012. The estimates of coal resources in the country given in Million Tonnes is given below :

According to the CSE Report, the State of Odisha along with that of Chattisgarh and Jharkhand is the most mineral bearing State. But for all its mineral wealth, the State performs very poorly in terms of human development indicators. The CSE Report points out that all the mineral rich districts of the State feature in the list of 150 most backward districts of the country. Orissa has the dubious distinction of clearing the maximum amount of forest land for mining in the country.

So far as the land utilization pattern of Orissa is concerned, of the total area, 5813000 hectares are forest area, 482000 hectares are having miscellaneous trees and groves, 443000 hectares are having permanent pasture, 392000 hectares are cultivable waste, 999000 hectares are put to non-agricultural use, 843000 hectares are barren and uncultivable land, 485000 hectares are currently fallow, 434000 hectares are other fallow and the rest 5680000 are the net area sown. So far as the operational holding of land is concerned, the land is divided into five categories i.e marginal, small, semi-medium, medium and large. of the total land holders, 54.08% are marginal holders, 27.89% are small holders, 13.71% are semi-medium holders, 3.93% are medium holders and 0.38% are large holders. Since all the communities of the state are patrilineal, land holding records are not maintained in the name of the female members.

(2012-13) Government of Odisha.(Economic % 20 Survey_ 2012-2013. pdf)

Odisha is rich in minerals and their exploration level has been increasing over the years. The rate of exploration of the minerals/ ores in the State has been less than 01% in all cases till 2009-2010 except for Chromite and Iron ore. While Iron ore production has increased during 2009-2010 by 3.21% chromite production has increased by 22.22%.

The overall picture of mineral production in the State during the period 2003-2004 and 2009-2010 has been represented in Table A.

Mineral Production (2003-2004 -2009-2010)

Sl.No	Mineral/Ore	2003-4	2004-5	2005-06	2006-07	2007-08	2008-09	2009-10
1.	Fuel (Coal)	602.0 (15.70)	668.20 (11.00)	705.45 (5.57)	812.81 (15.22)	896.86 (10.34)	977.86 (9.03)	1054.88 (7.88)
2.	Metals	434.1 (39.54)	554.7 (27.78)	641.25 (15.60)	750.62 (16.96)	831.81 (10.91)	856.75 (03.0)	885.69 (3.38)
3.	Non-Metals	44.01 (4.27)	47.6 (8.18)	50.1 (5.25)	51.67 (3.07)	57.14 (10.59)	56.37 (-1.35)	56.74 (0.66)
4.	Total	1080.01 (23.95)	1270.5 (17.64)	1396.8 (9.94)	1614.45 (15.58)	1785.81 (10.61)	1890.98 (5.89)	1997.31 (5.62)

Table A (Fig.'s in parenthesis indicate % growth over previous year.)

Of total forest land cleared for mining in India Odisha accounts for 17%. The State's water resources are as stressed, contrary to the the belief that Odisha is water surplus. Odisha's second largest river, the Brahmani, is one of the 10 most polluted rivers in India – "due to the large scale mining operations on its banks".

However Odisha is also facing the flak of authorizing illegal mining without the required stipulations. Though the State Government has emphasized on rapid industrialization of the State, the mode of operation has demonstrated a flagrant violation of rules and regulations.

Forest Area Diverted to Non-Forest Use by Activities (2009-10 to 2011-12)

Project Type	No. of Projects	Forest Area Diverted (in hec.)
2009-10		
Irrigation	01	3.963
Mining	09	960.785
Transmission Lines	02	51.630
Misc.	03	1293.779
Total	15	2310.157
2010-11		
Industry	03	311.836
Mining	07	571.396
Transmission Lines	00	00
Misc.	03	32.72
Total	13	915.962
2011-12		
Irrigation	01	230.13
Mining	09	542.1114
Industry	01	1.1535
Others	02	57.7855
Total	13	831.1804

(<http://www.odisha.gov.in/p&c/Download>)
(2011-2012/Annual_Plan_2011-2012_Vol_1para 1.40)

Abundant reserves of high grade iron ore, coal, bauxite, chromite along with other minerals such as limestone, dolomite, tin, nickel, granite, gemstone, graphite and others are also available in the state. In recent years the mining and quarrying sub-sector has been contributing about 7% towards Odisha's real GSDP at 2004-05 prices. Within the state, coal constitutes the lion's share (87%) of all mineral deposits, followed by iron ore and bauxite as may be seen from Fig 1. & Fig. 2 below:

COAL RESERVES IN ODISHA (2010-11)

(<http://mines.gov.in/annual-report/ann2011-12.pdf>, economic survey 2010-11)

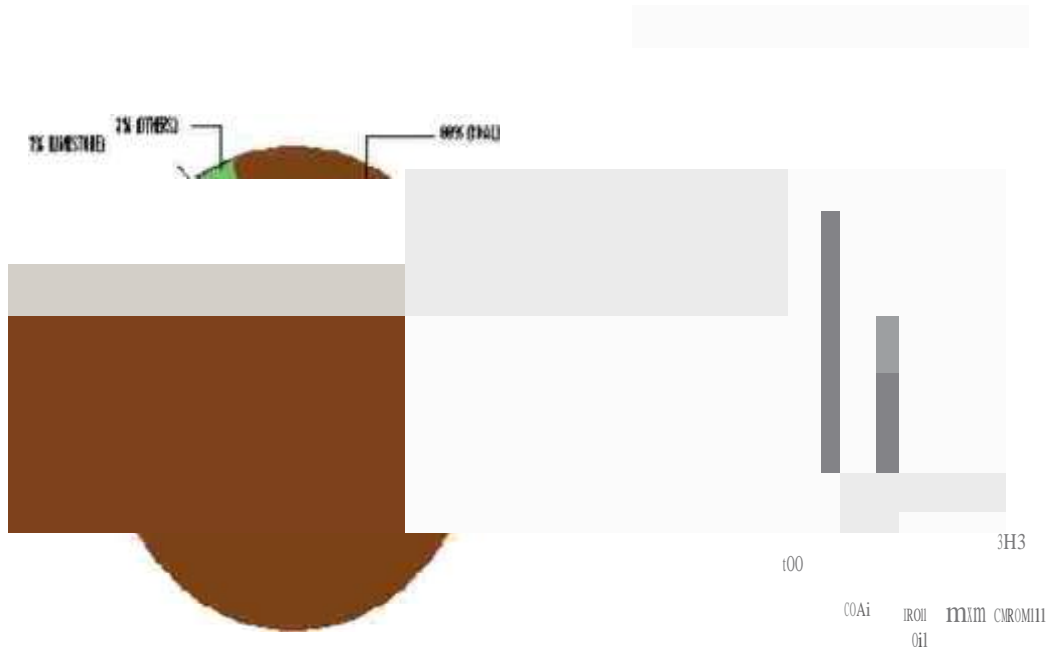


Fig. 1 (87% Coal – 65010.276 Million T
78% Iron ore – 5008.289 Million T
02% bauxite – 1800.859 Million T
01% lime – 1000.661 Million T & 03% others.)

Fig. 2

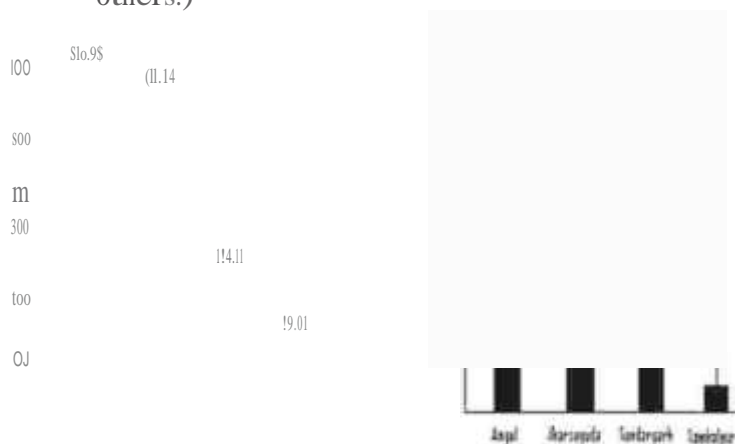


Fig.3

(Angul has the highest reserve of coal in Odisha followed by Jharsuguda, Sundargarh & Sambalpur).

District wise breakup of mineral extraction activities is illustrated in Fig.3. It may be observed that about 47% of coal has been extracted in Angul district and the rest from Jharsuguda, Sundargarh and Sambalpur districts.

GEOLOGY OF COALFIELDS OF ORISSA

Out of the 47 Gondwana and 14 Tertiary coalfields for the National Inventory of coal the state of Orissa hosts two large coal fields of India namely Talcher and Ib-Valley Coalfields. Systematic and sustained exploration by G.S.I and other exploratory agencies during the last two decades updated the coal resources of Orissa, thereby elevating its rank from sixth to second in terms of state wise coal resources. A glimpse of the coalfield distribution of Indian coal resource indicate that nearly 44% of total coal resources of the country are shared by four coalfields namely **Talcher, Raniganj, Ib-river and Jharia of which two are from Orissa and contribute 24% of the total National coal inventory Talcher coalfields**, the largest coalfields in the country is located in the Brahmani Valley to the North of Mahanadi river. Major part of the coalfield falls in Angul district of Orissa State, with parts spreading over to the neighbouring district of Dhenkanal, Deogarh and Sambalpur of Orissa. Talcher coalfield is one of the major coalfields containing huge reserves of power grade non-coking coal. The total area of the coalfield is 1860 sq.km., whereas the potential area is 1580 sq.km. The total geological reserve is 36868.12 million tonnes, which constitutes 18.7% of the country's total reserve.

At present there are 07 numbers of open cast mines and 03 numbers of underground mines in operation in the mentioned area.

A. Open Cast Mines		
Sl.No.	Name of the Area	Name of the Open Cast
01	Jagannath	Balanda
02		Jagannath
03		Ananta
04	Kalinga	Kalinga
05		Bharatpur
06	Hingula	Hingula
07	Lingaraj	Lingaraj
B. Under – Ground Mines		
Sl. No.	Name of the Area	Name of the Underground
01	Talcher	Deulabera
02		Talcher
03		Nandira

Mining Agency : Mahanadi Coalfields Ltd. (a subsidiary of Coal India Ltd.)

To meet the growing demand of coal, especially in the power sector, Coal India Limited has planned to increase its production capacity by expanding its project area which has resulted in the shifting of settled villages, farmlands and other socio-cultural establishments. Coal mining areas in India and abroad offer not only favourable positive impacts on the economy, but at the same time cause some unfavourable and degraded effects on the settled economy, society and culture.

To study the related problems **HINGULA OCP** has been taken into consideration following reports of repeated stirs and stalling of production.

1. The question of development vis a vis land acquisition comes into focus as also the policy of the different nodal agencies require substantive analysis. **Primarily and specifically** - to analyse the land acquisition policies framed by the acquiring authorities and problems relating to implementation
2. Looking from the perspective of the indigenous people of this area, it is an attempt to study the long and short term rehabilitation programmes introduced by the acquiring agency and their efficacy in the future.

Coal mining is a site specific activity and land is the primary input in coal projects. Acquisition of land involves simultaneously the question of displacement, resettlement and rehabilitation of the displaced communities. Under such circumstances both the Centre and the respective State Government as well the acquiring authority remains responsible and liable for the acts of acquisition. What requires imminent consideration is a uniform land acquisition policy, the absence of which has created severe policy implementation problems.

Existing R&R policies in India

1. National Rehabilitation and Resettlement Policy, 2007- Ministry of Rural Development, Government of India.
2. R&R policies of various coal producing states of India.
3. R&R policy of CIL- modified till date

PRESENT LAND ACQUISITION POLICY (ODISHA)

The Odisha Industrial Development Corporation (IDCO) is the nodal agency for identifying and acquiring land both from government and private parties at strategic locations for industrial purpose. IDCO extends help in identification of project site and the collection of plan and schedule of land from the revenue authorities. According to IDCO, while selecting the site care is taken to avoid forest, communal, homestead land as far as possible (recent reports emerging in the wake of the Shah Commission Report on the mining scam in Odisha has indicted the Government of Odisha on the blatant violation of environmental norms). Preference is given to government land for allotment.

Land acquisition in Odisha is governed by the Orissa Land Acquisition Amendment Act 1945, and Orissa Resettlement and Rehabilitation Policy 2006.

Clearing the doubts over the role of IDCO to acquire land for mining projects when its primary responsibility is to buy land for industries, the state government has said, 'there is nothing wrong in land buying for coal mining as mineral excavation is also an industrial activity.' The Union Ministry of Coal has allocated 32 coal blocks to 56 companies, both PSUs and private firms in Odisha. These coal blocks have a total reserve of 15,212 million tonnes.

All the 332 coal blocks are spread over an area of 325sq.km and the implementation of these projects would involve displacement of around two lakh people. (Business Standard Nov.2012).

Basic Features of Orissa Land Acquisition and Amendment Act, 1945 and Orissa Resettlement and Rehabilitation Policy 2006.

In a starred question (no. 259) in the Lok Sabha, on the R & R Policy for mining projects, by Shri Mansukhbhai D. Vasava to Shri S. Alagiri, answered on 30th March, 2012 – 'What are the salient features of the R & R Policy of the State Governments of Orissa, Andhra Pradesh and Jharkhand?' – (Supplementaries for starred question no. 259) :

1. Identity cards issued to each displaced family.
2. Land acquisition through direct negotiation and if that fails then through State Government.
3. All R & R matters for project overseen by a committee constituted in the Government.
4. For mining projects, following to be provided :
 - (a) Employment to one of family.
 - (b) skill development
 - (c) one time cash payment for families that do not want employment ranging from Rs 1-11 lakh To Rs. 5-5.2 lakhs.
 - (d) Convertible preference shares upto a maximum of 50% of one time cash assistance.
 - (e) House building assistance upto Rs. 150000 per family.
 - (f) Maintenance allowance of Rs. 2300 per month per family for one year.
 - (g) Transport allowance of Rs. 2300 per family.
 - (h) 25% higher compensation in case of settlement outside the district.
 - (i) Rehabilitation grant to be indexed to WPI.

(Source : Ministry of Mines, Government of India)

Land acquisition policy of Coal India Ltd.

In accordance with the existing regulations of land acquisition as prevalent in India, the public sector major Coal India Ltd.(a Maharatna Company), has acquired coal bearing areas in parts of Orissa through its subsidiary Mahanadi Coalfields Ltd.(MCL).

Acquisition proceedings are undertaken by the Company (Mahanadi Coalfields Ltd.) in accordance with the Coal Bearing Areas (Acquisition and Development) Act, 1957 (CBA), and the Land

Acquisition Act, 1894, and in certain cases by direct purchase after negotiations with the land owners. Underground as well as Surface –un-worked/virgin coal bearing land can be acquired under these Acts.

The Standing Committee on Coal and Steel (2010-2011), Ministry of Coal in its Report laid down the procedural norms as :

‘Whenever any land in any locality/area is to be acquired a notification under the CBA / and or, the LAA Acts, to that effect is published in the Official Gazette wherein the extent of land, so required, is notified. In case of any objection to the acquisition of such land, the interested person(s) can file his/her objection within 30 days from the date of publication of such notification. It is pertinent to note that the coal reserves of the country are mostly in the far flung areas inhabited by the tribal communities, most backward and weaker sections of the society.’ (Para 1.10)

‘Notification for acquisition of land under different sections of CBA Act (1957) is published by the Central Government in the Official Gazette while the notification for acquisition of land under different sections of Land Acquisition Act (LA) Act, 1894 is published by the State Government in the Official Gazette.

Apart from the above Gazette notification the notice of acquisition under the CBA Act is communicated amongst the land owners by proclaiming by beat of drums in the locality. For wider publicity regarding land acquisition, copies of the notices are affixed in conspicuous places like local schools, panchayat offices, temples etc. {Source : Standing Committee on Coal and Steel (2010-2011), (Fifteenth Lok Sabha), Ministry of Coal, Seventh Report, Lok Sabha Secretariat, New Delhi, Dec. 2010. Recommendation, (Sl. No. 2, para.22)

The New R&R Policy of CIL, Press Information Bureau, Government of India, Ministry of Coal 17-May-2012 19:16

Parliamentary Consultative Committee on Coal Meets, Coal India Limited has introduced a liberalised new Resettlement and Rehabilitation Policy, 2012.

The objective of the new policy as informed by Coal Minister, to the Members of Parliament attached to his Ministry, is to provide greater flexibility in resettlement and rehabilitation of people affected by coal mining projects i.e. Projects. It attempts to consolidate the different resettlement and rehabilitation practices that are being followed by CIL subsidiaries as per the different State land Acquisition Acts to determine the rehabilitation packages.

AREA OF STUDY - HINGULA OPENCAST MINES under TALCHER COALFIELDS (Coal mining authority- MCL a subsidiary of CIL), Location : ORISSA

Key facts :

Status : Producer

Type of work : Open - Pit

Location : India (17 km NE of Sikhyakpada)

Commodities : **Coal**

Water Impact

Water requirement (m³/per day) : 1760

Source : Ground water and mine dump water.

Land requirement

Total land requirement (ha) : 544

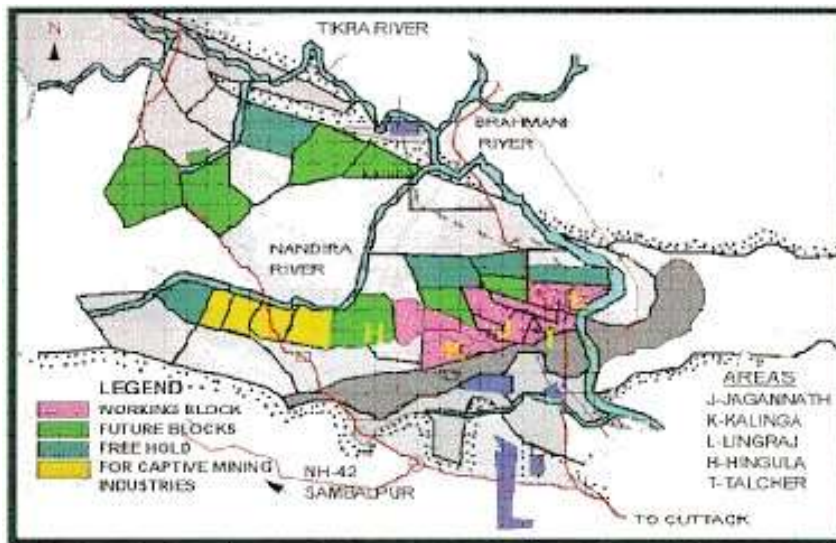
Land use agricultural (ha) : 138.98

Land use wasteland (ha) : 391.48

Land use water bodies (ha) : 5.99

Land use comments : 7.95 ha in settlements

People Affected by the Project : The Project involves R & R for 663 PAPs from 05 villages - Gopalprasad, Kusumpal, Anantagadia, Malibandha, and Nuamuhin.



Sample households surveyed covering **01 village** affected by the OCP. After displacement the Project Affected People have been resettled in different locations in and around the OCP. However more than resettlement the problem is more of land acquisition since most of the families have resented or refused to vacate their homes on several grounds. The village **Gopalprasad** has been selected as the site of survey as the maximum number of agitations and complains against land acquisition, rehabilitation and resettlement have been witnessed in this area.

Caste category – mostly belong to Hindu and Karana castes. Most of them are backward caste categories belonging to Chasa, Gauda, Guria Teli etc followed by Scheduled Castes mostly belonging to Dhaba, Pana, Khajuria etc. A major percentage of the General caste – Khatriya was also found.

Economic activities – mainly agriculture and other land related activities. A small percentage of the population is engaged in trades other than agriculture such as cobbler, goldsmith, carpenter, shopkeeper etc.

The **HINGULA AREA (Talcher coalfields)** is facing all the related problems associated with coal mining activities involving environmental as well as socio-economic degradation. The acquisition problems are basically linked to R&R issues including non-availability of valid title documents, demand for higher compensation over and above that prescribed in the land acquisition rules, resistance to shifting to rehabilitation site even after receiving full compensation amount. Increasing demand for coal requires an expansion or speeding up of coal exploration, production and processing. An ongoing social challenge for the coal –industry is the problem of mining induced Displacement and Rehabilitation in the present study area.

There are 15 villages in the core zone of the Hingula OCP which are affected by these activities of coal mining. Out of the total villages the acquiring agency has proposed to resettle the 15 villages/villagers i.e., 1425 PAFs (additional PAFs to be displaced due to Hingula II Expansion Project for 15 MTY is 115) as rehabilitation in a phased manner to facilitate uninterrupted production and expansion of the Hingula OCP. In the views of the acquiring agency this will enhance socio-economic benefits to the local population by way of direct and indirect employment; improvement in infrastructure and growth in ancillary facilities in those villages. But the difficulty lies in the fact that not only do the village folk lose their dwelling but they are also deprived of the land and natural resources that constituted their economic survival base. Displacement of villages along with their long standing or traditional economic-social-religious and cultural beliefs and practices are not only uprooted, but equally breakup the social and cultural bondage of the entire community leading to social problems.

MAJOR OBSERVATIONS

MCL follows the R & R policy of CIL in which inter alia , it has been mentioned that the subsidiary companies will follow the R & R policy of the state Government if the same is beneficial to the oustees. Accordingly the R & R benefits are provided as per R & R policies of the Government of Orissa (2006). The R&R package includes (1) land compensation (2) compensation for structures and built-up area (3) Plot of land for constructing house in the rehabilitation sites (village equipped with all modern amenities) or payment of money to the optees interested to settle elsewhere and (4) job to the members of the affected families. (Smile :MCL Samachar, Year 6, Issue 1, Jan-Mar 2007, p. 81).

I. Problems in land acquisition : Views of the Acquiring Agency

A major problem faced by the Company is the delay in the acquisition of land and associated problems of rehabilitation which leads to time and cost over-run of the coal projects.(Also corroborated in the Annual Report, Ministry of Coal, Govt. of India, 2011-2012, para6.3).

Tenancy Land

1. State Govt. maintains the land records which are the primary requisite for preparing the land acquisition proposal. These land records commonly referred to as Record of Rights (RoR) are often found not updated causing problem in ascertaining the actual ownership and title of the land and exchange value. (Annual Report, Ministry of Coal, Govt. of India, 2002-2003). The issue of patta to persons from the already acquired land of MCL by the State Government officials (Odisha) has further complicated the situation.

Instance 1 : Chharla village which falls under Belpahar OCP (Mahanadi Coalfields Ltd.), accounted for a total of 1209.42 acres of land including 388.50 acres of tenancy land out of which 375.86 acres of agriculture land was acquired in 1983 leaving 12.64 acres of homestead land. In 1991 this 12.64 acres of homestead land was acquired and full compensation was deposited with the State government. 225 persons from 154 PAFs (Project Affected Families) were provided employment and the 154 PAFs were allotted plots in the rehabilitation site each measuring 10 decimals.

1, The Chharla case being considered settled without any dispute faced new complications, when villagers without vacating their houses demanded a job to each youth above 18 years of age.

Additionally, the issue of patta by State Government officials without verifying records, to persons whose land had already been acquired by MCL led to further complication. Such type of problem has been recurring in different coalfields without any substantive rectification. Lack of coordination between the acquiring agency and the State Government offices and irresponsible action on the part of the latter is responsible for such hindrances in the acquisition process.

2. Delay occurs in processing the acquisition proposal at various levels of the State Govt. and preliminary notification after completion of all the formalities such as joint measurement, scrutiny of proposal etc. takes considerable time. Also the time over-run of the project adds to the uncertainty in taking actual physical possession of the land.

3. Resistance is offered by the tenants on the demand of employment which is beyond the norms at the time of taking delivery of possession of land although required statutory and other provisions are fully observed.

Instance 2 :

According to Puspa Swain (name changed on request), an agitator who lost their homestead and agricultural land to the coalmine almost a decade ago and later came under category I of land oustees under the State Government's policy which guarantees job for the displaced has been denied job even after fulfilling all the requirements of the State Government. Upon scrutiny by a joint committee comprising of Angul District Administration and MCL authorities they were found to be eligible for jobs. Though called for an interview and medical test a few years back they were again denied the jobs on the ground that they were non-matriculates. Similar cases have also been cited by other displaced families which do not have

eligible male members to take up the job. Failing to find suitable redressal they finally decided to stop work on their land.

Government land

1. Authentication of Government land by the State Government is required to ascertain the actual ownership of the area. Authentication work is carried out by the concerned Officer of Circle / Tahshil of the District and its delay affect the acquisition process.
2. Delay in diversion of forest land and associated problems of rehabilitation is a major reason for the slippage in the implementation of the projects. Dispute about ownership of land between the Revenue and the Forest Department in some cases delay the transfer.
3. Possession of Government land sometimes could not be taken due to large scale encroachment over such land. State Government is required to handover the land to the acquiring agency free from all encumbrances.

The biggest challenge according to the former Chairman of CIL, S.Narsing Rao is getting the villagers to agree to give up land that needs to be acquired for mining something he says , has become 'significantly more complex' during the past five years'. (The Times of India, Bhubaneswar, April 29th,2012).

Forest land

1. Delay in the grant of environment and forest clearance and the restrictions in exploration in forest area by the Ministry of Environment and Forest is a major impediment. Considerable delay takes place in handing over the forest land after its release by the Center/State Government. Delay occurs in issuing the NOC. A time frame for giving possession of the released land is required.

II.

1. **Maneuvering by the land oustees** : It has been found that there are many cases when the land oustees/PAPs who have been provided employment by the acquiring agency (Employer), purposefully resort to tactics to evade evacuation of their acquired lands despite being provided adequate compensation.

A major finding from this survey has revealed that a majority of the land oustees, by virtue of adequate compensation against the land acquired have a burgeoning bank balance (courtesy the land acquiring agency).

2. Moreover the rehabilitation benefits such as housing, medical and health facilities, education, roads, transport and communication, other infra-structural and basic amenities at the rehabilitation townships have enabled upward social mobility and transformed their basis of economic security.

By way of employment against land these land oustees enjoy better standard of living as compared to their earlier ones. It has been observed that most of the land owners opt for voluntary rather than involuntary displacement given the option of employment benefits by the acquiring agency.

3. According to sources, MCL was ready to give jobs to the land losers provided the villagers vacate their homes. But in the opinion of the striking villagers, they would not demolish their

houses until the rehabilitation site is ready. Moreover, they rejected MCL's demand to first demolish their homes before getting offers of appointment.

Also the villagers instead of vacating their houses now demand a job to each youth above 18 years of age defying purposefully the eligibility criteria. It is the demand for job which has become the singularly main cause for most of the disturbances. There has been sporadic incidents of closure of mining operations by the villagers demanding acquisition of their land and related employment opportunities.

Instance 3 : Solda village measuring approximately 2350 acres lies partly in Konark Block (2160 acres) and partly (190 acres) in Balaram OCP. 190 acres of land acquired for Balaram OCP was fully settled without any dispute. The villagers demand for acquisition of the rest of the land over Konark Block by MCL resulted in a stalemate affecting the operations in Balaram and **Hingula** mine for 27 days on this count.

Instance 4 : The Hingula coal mine is crucial as it produces a daily average of 20,000 tons of coal to meet the growing demands of the power sector. Moreover stalling of Hingula mine production and dispatch means the closure of another mega mine. The villagers of Gopalprasad had decided to go for an indefinite agitation to paralyze the mines because of the non-clearance of 201 jobs for their rehabilitation. The job list, according to the villagers was submitted to the MCL by the Angul District Collector for final approval.

As per policy stipulations, those who lose their dwellings, homestead land and 1/3rd of his tenancy land come under Category 'A' oustees and are guaranteed for employment. MCL authorities refuse to approve the list pointing out certain cases of anomalies where categorization has been diluted and irregularities have occurred. They have raised the question – **how a dwelling, homestead land and agricultural land can be possible over an area of 0.007 decimal of land**. Angul District official sources maintain that the list is correct. They maintain that irrespective of the land lost they come under category 'A' as per the policy. Division of land occurred when total land of a recorded tenant is divided among eligible families under the tenant law.

The fear of prolonged agitations and mines closure have forced the coal mining authorities to succumb to the insatiable demands for undue advantages made by the PAPs. The politics of manipulations and growing opportunism have divided people into 'interest groups'.

3. The Annual Report, Ministry of Coal, Government of India 2011-2012 mentions that :
“Presently the land acquisition process is becoming very difficult due to severe competition among the acquiring agencies. The competitive scenario arising out of acquisition of land by several other agencies in the near-by areas of coal projects of the CIL has created a complex situation.

Different agencies of other sectors as well as captive are found to effect a smooth passage under similar circumstances though large scale displacements and felling of forests have received tacit support of the State machinery. Interestingly the total compensation package offered by these Companies is far below as compared to that of MCL. Compensation packages of the private

sector coal mine owners, by direct negotiations with the land owners are offering much higher rate of land compensation compared to the compensation rate offered by CIL Coal Company's as per prevailing rates calculated on the basis of the Coal Bearing Act(1957) and the Land Acquisition Act, 1894 (as amended in 1984)."

It was found that inspite of repeated requests from MCL no/limited cooperation is received from the State Government agencies to settle these issues. On the other hand the private companies operating in the State (Odisha) or in the near-by areas of coal projects of MCL/CIL do not offer employment and R&R benefits to the Project Affected People (PAPs) so displaced in their total compensation package. These private companies get full support of the state machinery and specially the local administration in their land acquisition process. The mining company(MCL) has clearly mentioned that the mining operations have not only been hampered by repeated agitations against land acquisition but that the company has no extra land at its disposal for expansion.

The private mining companies, on the other hand have not only been allotted mining leases at a favourable rate but that these companies have been able to purchase much more land than is strictly required for a project. The lackadaisical attitude of State Governmental officials and willful indulgence in corruption of the same may be largely blamed for creating such impediments in the functioning of the public sector organizations. (The large number of scams in the mining sector in Odisha, as revealed in 2013-2014, substantiates the argument.)

View on land acquisition in Odisha :

'Two major issues on land acquisition in Odisha are the Posco and the Vedanta Projects. For Posco, there is no reason why it should have claimed 4000 acres. To build up the steel plant, it hardly requires 500-1000 acres of land. If it claimed only the required amount, the problem of land acquisition would be solved in Odisha. Vedanta has claimed more than 5000 acres with the conglomeration of a university. It is claiming area for its project in the prime location of the state – near the capital Bhubaneswar and the famous spot Puri. Vedanta can go to Western Odisha where land is available in plenty.' (Captain H. Mohapatra, Chairman, Orissa Assembly of Small and Medium Entrepreneurs' Association, Business Economics, July 31,2011,p37)

It has been further argued, that the reason behind the selection of such prime locations is that the land price is much higher here and is likely to increase manifold in the future. The companies will profit from such ventures by selling the land to the developers. The Vedanta alumina mining refinery has been refused mining rights in the Niyamagiri hills (Odisha), by the tribal councils resisting severe governmental pressure in 2013-14.

4. It was observed that the affected communities are not aware about the policies/laws and they are often biased /misled by some middle-men or groups. As a result they always suspect the company. This is mainly due to lack of transparency in operation, non-participatory decision making process with blue print approach, nepotism, favoritism, lack of concern to the public issues, mis-utilisation of natural resources without considering humanitarian aspects as unauthorized owner, non-permissible pollution in and around the development projects/mines operational area.

5. World Bank financed projects – Benefits which should have been accrued surrounding the acquired lands or projects was less than satisfactory in terms of the performances on the part of the acquiring agency/ NGO or the local government. None of the projects of the Environmental and Social Mitigation Plans such as poultry farming, pisciculture, diary farming, small-scale industrial initiatives like carpet weaving, tailoring, training and development in areas such as apprenticeship, driving, mechanics, are found to be in operation as on date. Long term effect which should have percolated to the PAPs failed to take shape due to the lack of dedication and initiative on the part of the respective agencies. The hype generated to garner financial support from the World Bank, ADB and other financial institutions was short lived, i.e all the initiatives/enthusiasm came to an end with the reimbursement by the said banks of the expenditures incurred on the aforementioned ESMP projects.

Hence it was observed that in most of the cases the dedication required for proper rehabilitation of the PAPS is basically lacking amongst the different agencies involved in land acquisition and R&R process.

However, though some praiseworthy efforts by the mining agency are to be noticed, ‘waiting for a regular job in the project’, syndrome has created major hurdles in the rehabilitation of the PAPs. Many PAPs deliberately avoid accepting alternative benefit from the project, fearing that such acceptance may reduce their prospect of being absorbed in the project on a regular basis. Hence creating alternative options for sustainable existence becomes a formidable challenge for the project and the initial enthusiasm to undertake /initiate development programmes has turned into a liability for the project. Interestingly many PAPs who were offered manual jobs in the Project either by the Project officials or the contractors refused to accept the same due to their social prestige and status in the pre-acquisition stage.

In fact Coal India has been tied down by snarly regulations and political populism, as well as by concerns about the environment and the rights of the displaced farmers.

6. Lack of uniform approach by different states throws further challenge to a Company like CIL whose operations are spread over 08 states. Presence of multiple mine operators at the same location both from public and private sectors with their own policies and strategies make the issue more complex.

7. Most importantly, in the absence of a specific National Law prohibiting purchase of land, settlement of population and construction activity in prospective mining area or coalfield, land mafia and vested interests also emerge, taking advantage of considerable time lag since the coal is first proved and a mine is designed and land taken into possession by the mining company.

Views of the Project Affected People (PAPs) :

1. The productive land before acquisition is in most cases a collective source of livelihood, in the sense that it provided for the subsistence of not only the owners of the land but to other stakeholders too. The indirectly affected families like the agricultural labourers, carpenters, blacksmith, cobbler

and so on, i.e., those depending on the owners land are deprived of any compensation or other long term benefits as a part of the rehabilitation and resettlement process. This has led to the problem of joblessness, unemployment or underemployment. Loss of access to leaseholds and share-cropping opportunities and loss of wage employment have resulted in increasing discontent. Small operators lose their business, their place of business and their customers.

2. Land acquisition for infrastructural projects (mining) results in the shifting of the PAPs to new locations where application of traditional skills or opportunities do not exist or take time to develop. It is to be noted that the PAPs are not a uniform category in the sense that prior to displacement, they were divided on the basis of social, economic and gender categorization. Post displacement status is accordingly determined. The displaced having sizeable lands or educational / occupational skills and are younger in age are at an advantage compared to the marginal farmers or unskilled labourers. Those who succeed in converting the compensation money into productive capital (for eg. purchasing land for land or setting up shops in the mining area or operating tractors, dumpers or trolleys on contract) gain from the displacement.

The main dissent voiced by the PAPs against the acquiring agency is the failure of providing a 'regular job' to the displaced. The new mining operations offer limited employment opportunities. As mining becomes less labour-intensive, the demand is for skilled labour for unskilled locals. Though recent R& R efforts have initiated skill upgradation and training programmes for the young, the trained PAPs however expect the projects to provide them with regular jobs. Rather than compensation it is the livelihood which is more important, as they argue that the compensation will get exhausted in a few years.

3. A sense of marginalization is evident amongst majority of the PAPs (specially the senior category). Many of the PAFs' lost their social standing which they had enjoyed prior to the acquisition of their land. A displaced PAF having acres of land and enjoying the status of a landlord in the community, was reduced to the same status of an ordinary PAP as the benefits of rehabilitation applied equally to all the displaced irrespective of their pre-acquisition status. This is considered as denigrating to their social prestige and power and has reinstated their urge to retain the land unless compensation and rehabilitation packages conform to their desired specifications.

4. A major grievance of favoritism and nepotism against some of the R & R officials has been repeatedly voiced by the PAPs. In the distribution/allocation of manual jobs in the post acquisition period, the acrimonious relationship between the officials and the PAPs prior to land acquisition gains upper hand. Also brought to notice was the need to satisfy the whims/desires of some of the officials and contractors at the project which though derogatory in nature was essentially required in getting casual jobs.

5. The Open cast mining project severely results in land degradation mainly due to soil erosion, dump-pits/excavation, waste dumps etc. Even though the mining agencies undertake land reclamation, loss of vegetation and productivity of land cannot be compensated for. . Even if land is available it is not suitable for cultivation due to lack of irrigation facilities and reclamation. It was observed

that the PAPs are not keen to revive their land based living. The interest of the younger generation PAPs was more on non-farm employment since in their opinion 'agriculture does not fetch them good income'. Finally, the cost of land increases immediately with the announcement of the setting of new projects making it impossible /difficult for the PAPs to purchase in the open market.

6. In fact the PAPs have emerged as the most important bargaining stakeholders in the entire process. They need not only be informed but also consulted on matters of land acquisition, entitlement of compensation and choice of resettlement option. Practically speaking the PAPs, in almost all the cases (in the area of study) have become the decisive factor in any attempt to initiate constructive dialogue towards the early settlement of dispute.

7. Though the concerned Project has provided /and is trying to restore common property resources such as ponds, wells, grazing lands, forests, community centers, panchayats/village meeting spaces, temples etc. the PAPs are taking time to adjust to their new habitat (working and living environment) which they consider to be hostile to them. Most of them rued that involuntary dislocation has in fact broken the community into nuclear structures forcing individuals into competition for development gains. While some have been able to sustain themselves in the competition, others have fallen on hard times.

8. The family bondage and cohesiveness has ruptured in many of these families in the post acquisition phase. Firstly the younger generation is more interested in modern amenities and technologies and prefer a smooth life free from the hassles of farming or rearing of animals or the collection of forest fuel. Most of the rehabilitated families have LPG connection in their houses and other civic facilities and no more prefer to defecate in the open. Secondly, the disbursement of compensation money among the stakeholders have very often led to family disputes, which in the past would have been solved by the community/panchayat. However in the present situation such conflict of interest often leads to litigation and intra-family hostilities.

9. The women in the traditional system have very little knowledge or experience of mining generated employment, which in the long run results in several medical induced distress.

The huge amount of compensation received by the stakeholders has only helped in increasing cases of drunkenness, domestic violence and prostitution. In most of the cases reported, the individuals having no prior knowledge of banking found it more judicious to spend the money in gambling/ drinking thereby creating economic hardships for the family.

10. As a matter of fact, out of the total land acquired for the industrial or development project only a small percentage belong to the ST population. Representation in the public hearings conducted by the Government agencies are found to be inadequate. Considering their location in the social stratification system accompanied with illiteracy result in the failure in articulating their demands and objectives.

RECOMMENDATIONS

The issue of land acquisition has become very crucial and sensitive in recent times and warrants

active participation of all the concerned stakeholders – the mining companies, Government and non-government organizations and representatives of the affected communities.

The generated database provided critical input for formulating viable and pragmatic Rehabilitation Action Plan for the PAPs in line with their entitlements. The study probed into the attitudinal dimensions of the PAFs to understand their present and future orientations. The Rehabilitation and Resettlement options as desired by the PAFs have been studied both in quantitative and qualitative terms. The information's have been analysed in terms of various socio-economic parameters.

Key areas of rehabilitation focus during implementation should be on –

- (1) Resettlement of displaced PAPs,
- (2) Economic rehabilitation of the PAPs through different income generation projects.

The identification /final acquisition of the relocation site should be based on participatory methods undertaken by the Company. It should involve the participation of and discussion with the villagers (who are to be displaced) sufficiently ahead of land acquisition.

Since the amenities to be provided vary from site to site as per the State's policy/guidelines and the infrastructure that existed prior to the demolition, it is advisable to develop infrastructure facilities conducive to the parameters that defined the socio-economic-political structures of the displaced prior to acquisition.

As already noted the PAPs have emerged to be the single determining factor in the smooth running of the project. Transparency regarding the construction of the mining project is required to gain the confidence of the PAPs. This is essentially for getting their full cooperation in the physical acquisition of legally acquired land. Since the PAPs are more interested in non-farming rehabilitation programme initiative should be taken – (1) to prioritize the PAPs interested in the training. (2) to provide training in skill development/trades beneficial to the PAPs in development of self entrepreneurship.

3. Suitable amendments may be considered in CBA Act so that compensation earlier approved may be reassessed considering the prevalent market rates of the adjoining area at the time of delivering the physical possession of land. For fresh cases, compensation rates may be assessed based upon the prevalent market rates of the adjoining area at the time of delivering the physical possession of land .

4. Long term lease of land : Rather than purchasing land, it could be leased on a long term basis. This could ensure that the asset continues to belong to the land owner and the land is also assured of a long term regular source of income. However it needs to be ensured that the land is returned to the owner in the same or better condition in which it was leased.

5. In cases where land values are likely to appreciate in the near future, all those who stand to lose their livelihoods could be offered a part of the developed land. This will enable the PAPs to commercially utilize the resources to generate livelihood.

6. State Govt. should be involved for developing infrastructure like power supply and road to the project site. State Government officers should be engaged on deputation to coal companies to expedite land acquisition and compensation arrangements. Often, land records with State Authorities are inaccurate or incomplete. This leads to delays in processing acquisition of land and disputes over ownership and size of land plots. Updating and computerisation of land records supported through survey of land is essential. State Govt. should make suitable legislation to stop construction on coal bearing land.

10. Monitoring- For carrying out the above functions effectively, formation of appropriate committees consisting of representations from key Ministries, the State Government, the coal mining authority and the project affected people is suggested.

Conclusion : It was observed that the efforts by the Project Implementation Authority in taking physical possession of legally acquired land have been repeatedly thwarted by the PAPs. It needs to be mentioned in this respect, that the notion of anti-land acquisition created by a section of activists (thriving on this single agenda), political interference by political parties, leaders and pressure groups has helped to create a severely unfavourable situation which may not be advantageous for the PAPs in the long run. This is not to demonstrate undue support in favour of the Project Implementation Authority but logistical evidence from collected data point in this direction. It has been observed that in Hingula plantation % in the year 2010 has been reduced marginally in respect to 2009, inspite of increase in plantation area. This has occurred primarily due to increase in total mined out area. Interestingly, what is to be noted the mining Company failed to increase its production primarily due to frequent disruption in the production-supply process by the land displaced. As also the total mined out area remained restricted since the operational area could not be extended as the MCL authorities failed to acquire the already acquired land due to severe resistance by the displaced and limited cooperation from the State Government agencies.

The issue needs to be addressed from the time of planning, during the execution and after the closure of the mine. A uniform and balanced approach would enable the government and mining companies to ensure a hassle free land acquisition, resettlement and rehabilitation process.

References :

1. Agnihotri, A. 1996. "The Orissa Resettlement and Rehabilitation of Project-Affected Persons Policy, 1994—An Analysis of its Robustness with Reference to Impoverishment Risk Model." In A. B. Ota and A. Agnihotri, (eds.), *Involuntary Displacement in Dam Projects* pp.19-42. New Delhi: Prachi Prakashan.
2. Ahmed, Nesar and Kuntala Lahiri-Dutt, *Engendering Mining Communities: Examining the Missing Gender Concerns in Coal Mining Displacement and Rehabilitation in India*, in *Gender, Technology and Development*, Sage, New Delhi, 2007.

3. Asian Development Bank (ADB). 1998. Handbook on Resettlement. A Guide to Good Practice. Manila: Office of Environment and Social Development, ADB.
4. Basu, Malika. 1994. "The Basic Needs Approach in Displacement Situations." *Mainstream*, July.
5. Behura, N. K. and P.K. Nayak. 1993. "Involuntary Displacement and the Changing Frontiers of Kinship: A Study of Resettlement in Orissa" In M. Cernea and S. Guggenheim, (eds.), *Anthropological Approaches to Resettlement: Policy, Practice, Theory*, Colorado, Boulder: Westview Press.
6. Cernea, Michael M. 1986. *Involuntary Resettlement in Bank-Assisted Projects: A Review of the Application of Bank Policies and Procedures in FY 1979-1985 Projects*, Agriculture and Rural Development Department, Washington, DC: World Bank
7. ———Cernea, Michael M. 1990. *Poverty Risks from Population Displacement In Water Resources Development*, HIID Development Discussion Paper No. 355, Harvard University, Cambridge, MA.
8. ———Cernea, Michael M. 1995a. "Social Integration and Population Displacement: The Contribution Of Social Science," *International Social Science Journal*. 143:1:91-112.
9. ———Cernia, Michael M., *Involuntary Resettlement in Developmental Projects, Policy Guidelines in World –Bank Financed Projects*, World Bank, Washington D.C., 1994.
10. Directorate of Mining and Geology, *Mineral Statistics of Orissa, 1994-'95*, Department of Steel and Mines, Bhubaneswar, Orissa, 1996.
11. Downing, Theodore E. 1996 "Mitigating Social Impoverishment when People are Involuntarily Displaced." In C. McDowell (ed.), *Understanding Impoverishment*. Providence, Oxford: Berghahn Books.
12. Downing, Theodore , *Avoiding New Poverty : Mining Induced Displacement and Resettlement*, International Institute of Environment and Development, 2002.
13. Eriksen, John H. 1999. "Comparing the Economic Planning for Voluntary and Involuntary Resettlement Projects." In M. Cernea (ed.) Washington, DC: The World Bank.
13. Fernandez, Walter, *Mining and Displacement in Singh et al .,(ed.), Managing the Social and Environmental Consequences of Coal Mining in India*, The Indian School of Mines University, Dhanbad, 2007
14. ——— , *Development Induced Displacement in India*, in S. C. Dube (ed.), *Antiquity and Modernity in Tribal India : Continuity and Change Amongst the Tribals*, Vol. 1 Inter India Publishers, N. Delhi, 1998.

- 13.____, and Anthony Raj, Development and Displacement in Tribal Areas of Orissa, Indian Social Institution, Delhi, 1992.
- 14.———, 2000. “ From Marginalisation to Sharing the Project Benefits.” In M. Cernea and C. McDowell (eds.) Risk and Reconstructing Livelihoods, Washington, DC: The World Bank.
- 15.———, J. C. Das, and S. Rao. 1989. “Displacement and Rehabilitation: An Estimate of Extent and Prospects.” In Fernandes W. and E. G Thukral (eds). Development, Displacement and Rehabilitation. New Delhi: Indian Social Institute.
- 16.Nayak, Ranjit.. “Risks Associated with Landlessness: An Exploration Towards Socially Friendly Displacement and Resettlement,” In M. Cernea and C. McDowell (eds), Risks and Reconstruction, Washington, DC: The World Bank.. 2000
17. YARR, Final Report of Social Mitigation Project for Rehabilitation and Resettlement in Coal Sector Displacement through FCPI of PAPs and IPDPs, June, 2002

Internet sources:

- 1.http://assets.cambridge.org/97805218/17639/excerpt/9780521817639_excerpt.pdf
0521817633 - The Dynamics of Socio-Economic Development: An Introduction
Adnam Szirmai,Cambridge University Press
2. Mining, Social and Environmental Movement, World Rainforest Movement, March, 2004.
- 3.Pandey, Balaji. “Impoverishment Risks: A Case Study of Five Villages in Coal Mining Areas of Talcher, Orissa.” Paper presented at the Workshop on Involuntary Resettlement and Impoverishment Risks, New Delhi, 1996.
4. TERI, Final Draft Report of Area wise Environmental Quality Management (AEQM) Plan for the Mining Belt of Goa State, Tata Energy Research Institute, New Delhi,1997.
5. 6th, State of India’s Environment Report, Centre for Science and Environment, N. Delhi, 2006
6. Vasundhara, Social, Economic and Health Impact Assessment due to Coal Mining- A Case Study of Talabira Coal Mines in Orissa, 2006.
- 8.MAPS OF INDIA.COM