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Development and Displacement in the Damodar Valley of India



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Development and Displacement in the Damodar Valley of India

Shatabdi Das

2021

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Introduction

Development encompasses socio-economic and political order, policy making and concerns for stakeholders with the objective of optimising the organisation of resources over space.¹ Economic development in urban areas is shaped by social cohesion, political mandate and governance.² Mode of production, industrialisation and transformation of space result into uneven growth due to the differentials in accumulation and circulation of capital and harnessing of nature.³ Environmental capacities and limited environmental possibilities that characterise territories, forge power and labour divisions, affect quality of life and health and delineate regions.⁴ Development may thus be considered as the offshoot of interweaving of different sectors of economy and society that reflect progression but also create communes of disparities and exclusion through the occurrence and allocation of resources; and thereby the debate of development and environmental degradation and displacement keep rolling in close association. Development theory of state-led modernisation of the Nehruvian era and privatisation with focus on extractive capitalism in the period of neoliberalism has been prominent in the urban-industrial corridor encompassing the Raniganj and Jharia Coal belt of the Damodar Valley. The history of the struggle of indigenous population with the State in the western flanks of the Chota Nagpur plateau, once vegetated by dense forest, provides an adequate backdrop for understanding the development-displacement conflict⁵.

During the First, Second and Third Five year plan periods (1951-1965), West Bengal had witnessed growth in manufacturing industries and recorded high employment in engineering, chemicals, paper industries, with gradual diversification into other sectors⁶. Urban and infrastructure-transport development followed industrial development and expansion of coal mining operations have been leading the way to environmental degradation in its varied forms - depletion of groundwater reservoirs, pollution of surface water sources, air and land pollution, depletion of vegetation⁷. Coal mining has been a developmental activity in the urban-industrial corridor of Asansol-Durgapur region encompassed by the Raniganj coalfield, but has been so at the cost of damaging the natural ecosystem. With dam construction in the eastern stretches of the Damodar valley in 1950s, underground mining was the chosen method of coal extraction. In the recent decades, increasing demand for power grade coal and availability of high capacity fully mechanised machineries make extraction from inferior quality thick shallow depth coal seams the more popular

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method of mining⁸. Open cast mining method brings with it greater challenges of land acquisition because large stretches of cultivable or vegetated land may require conversion for mine pits to become operational. The implementations of resettlement and rehabilitation (R&R) schemes face turmoil, especially when land sellers or the project affected persons (PAP) deviate from their initial decisions⁹. Thus, R&R schemes often remain partially fulfilled even with long years in passing.

1. Development and Problems in the Study Area

1.1. History of Coal Mining in the Region

The coal region across the two eastern states of Jharkhand and West Bengal in the Damodar Valley stretch from Mugma in the west to Durgapur in the east for about 75 kilometres; a north-south expanse of 35 kilometres and area coverage of 1560 square kilometre, with an area of 156.1 square kilometre developing from rural to urban scape between the years 1971 and 1981.¹⁰ In 1970s coal mining remained bounded in the Raniganj region only within collieries at Egara, Raghunathchak, Nimcha, Jemari, Satgram, Bansra, Charanpur, Kunustoria;¹¹ now these settlements are enumerated as Census Towns (2011).¹² In the initial years of coal mining in the region in 1815-16 AD, tribal labourers came to Raniganj in West Bengal from Santhal Pargana of Jharkhand. 'Wage paid only if there is work' under such wagers, *Majhi, Hansda, Marandi, Tudu, Soren, Kisku, Hembram, Murmu, Basra* tribes had come to the coalfields; the *Bauris* from the surrounding districts of Raniganj were already in count in the coal region. Males and females from the then marginalised communities of Bihar namely *Kabar, Bhuiya, Bhuri, Kurmi, Nuniya, Dosan, Kora* had joined the groups of labourers.¹³ The Bauris and Santhals used to living in huts, constructed their slums in the vicinity of the collieries¹⁴ – a pattern of labour migration that has changed little in recent times with mine operations now being outsourced to private companies and nature of employment becoming contractual; miners are even today often found settling down in slums expanding along coal mines.¹⁵ The mining companies used to build haphazardly growing congested dwellings for miners called 'dhowrahs' with inadequate housing amenities. Settlements developed in the peripheries of Asansol and the fringes of the city sprawled, while gradually Raniganj became the coal headquarter and Asansol the centre of railway wagon production as the struggles of mine workers continued – half life on the ground while another half beneath the ground!¹⁶

Industrial production grew from 1857 to 1866 as railway operations expanded and thus the demand for coal went up. From 1850s to 2010 coal production increased about two times.¹⁷ The end of nineteenth century saw an increase in the number of coal mine workers who had been migrating from the villages to towns in search of income and found means of earning by working at the booming mines. In the year 1991, around two-third of the workers in the Raniganj coal mines were local tribes. The remaining were migrants from surroundings of Chota Nagpur. With drop in level of income in agriculture due to its seasonal nature, labourers who had migrated from north Bihar, Uttar Pradesh, Orissa, Madras, started finding engagement for making their livelihoods by working the coal mines.¹⁸

1.2. Development in the Coal Country

Plans for the development of the river valley of Damodar had surfaced in between late 1940s and 1950s. Activities such as power generation, irrigation and flood control were taken up in the area through the development of multipurpose projects authorised by the Damodar Valley Corporation

established in 1948.¹⁹ The potential of the coal mines and other mineral reserves in the region had augmented cumulative development such as industrial, agricultural and socio-economic development including public health and economic wellbeing along with the prime objective of taming the river regime by controlling its floods. Expenditure and budget allocation for targeted micro-area development led to spatial and structural transformations in the form of urbanisation of the districts that were closely aligned to the watershed boundaries of the valley.²⁰ The river basin was ideated as a spatial unit for regional holistic planning with thrust on acquisition of land, resettlement of displaced persons and industrial expansion, among others. The construction phase in coal mining and other extractive industries can increase the potential of income generation and hence accessibility to remote areas in terms of infrastructural development. This in turn adds to the number of migrants in the area owing to job availability, but with time, such economic activities also cause considerable damage to physical environment and social disruption.

The reserves of good quality coal in Raniganj and Jharia of India supported the establishment of coal mines since late nineteenth century; nonetheless, use of unscientific mining techniques, in the initial years of mining, has turned the coal belt into an unstable area now. Economic development took off in independent India with state-led modernisation and gradually transitioned into globalisation-privatisation in the neoliberal era. Between 1950 and 2000, thousands of acres of tribal land were lost to new industries. In 1972 Census, displacement among tribal population continued when the coalfields were nationalised in 1972 giving control to the state over the coalfields in Chota Nagpur region. In 1991, land was acquired from the tribal population and leased out to private corporations, further marginalising the tribal people. With development and decline in agricultural investment came the switching sides from agriculture to industries, coupled with displacement, dispossession, environmental degradation as mineral rich land was acquired for industries and urbanisation²¹.

1.3. Problems in the Study Area

The study area encompasses the urban-industrial zone stretching from Dhanbad to Durgapur situated in the Jharia-Raniganj Coal belt of the Damodar valley. Pollution from mineral extraction and silting-up of the river bed due to mineral and industrial wastes threatens the riverine ecology and affects life in this riparian area. Environmental and health hazards have been spiralling with the government and other supervising authorities battling the challenges that development poses on the sustenance of safe environment. Coal mining, dam construction, heavy manufacturing and allied industries and infrastructure projects have been the major pull factors for migrants and urban growth in this part of the country; however, issues of land acquisition and displacement, occupational diseases, lack of safe work environment, housing and resettlement (more so in case of informal mining that triggers higher risks of hazards), closure of industries and outmigration that leaves behind abandoned settlements of mine towns, defacing at coal pits – environmental deterioration and the challenges of rehabilitation also loom large in the area.

There is imminent danger and vulnerability to land collapse that sometimes result into loss of life in underground mine areas. The Eastern Coalfields Limited (ECL) – is a subsidiary of Coal India Limited (CIL) that operates mines in Jharkhand and West Bengal. People residing on land under ownership of, acquired or leased out by ECL are vulnerable to loss of land claims. Lack of agricultural land characterises most workers as wage labourers, especially those working and living in project affected areas (also known as PAP areas) or in close vicinity of mining sites are affected by health disorders. This is largely due to exposure to polluted drinking water sources that are

contaminated by mine waste, thus, rendering them less capable to work as daily wage earners. Scarcity of drinking water and poor quality of water are problems faced despite piped water supply from DVC or municipal corporation supply in most collieries.

Underground mining of coal makes surface conditions unsafe in many areas necessitating diversion of roads, railway tracks and shifting of a number of settlements. Raniganj Coalfield (RCF) has above 49 localities that have been declared unsafe for human habitation. The new town of Mangalpur near Raniganj where 60,000 people are affected by mine-related subsidence has been placed in rehabilitation plans. Open cast mining damages the land surface through excavation of soil and rock strata, quarries and generates over burden above the coal seams. 6,055.5 hectares of land in Raniganj Coalfield and 4,561.14 hectares in Jharia coalfield have been severely damaged due to subsidence, abandoned quarries and dumps of mine waste. Mine fires are common at Open Cast Pits (OCPs) leading to life losses, thus entitling family members with financial compensation or absorption in the workforce of ECL. Fire spreading from roadside goaf due to exposure at the time of informal mining, spontaneous heating of roof coal and bursting of electrical equipment make the ambient environment susceptible to breakout of mine fires.²²

2. Land Acquisition and Displacement

Research underlines that the state's response to consent and Social Impact Assessment (SIA) during land acquisition for setting up or opening of new mine areas are questionable, but compensation and Resettlement and Rehabilitation (R&R) policies follow through. The satisfactory performance of the State in such cases is sometimes challenged by the ground realities that the displaced population face in the region. Rehabilitated people are absorbed in the workforce but the sustenance of economic activity becomes dubious due to the changing nature of recruitments (mostly contractual and outsourced in today's time).

2.1. Land Acquisition

In the late nineteenth and early twentieth centuries massive expanses of the coal bearing seams of Damodar Valley had been acquired by private companies. Haphazard acquisition, lack of planning and unscientific mining methods had paved the way to degradation and turned much of the tracts into wastelands.

The Land Acquisition Act 2013 requires the companies to obtain consent from 80 per cent of the affected communities from the Project Affected Persons (PAP). As Pingali points out in his research, the challenges faced in obtaining consent of the landowners and residents make the efficient implementation of R&R plans difficult.

Land transaction for private investment requires approval of 80 percent of the affected communities and for public-private partnerships consent from 70 percent of the affected communities is mandatory. Social impact assessment has also been made compulsory for all land acquisitions, except for acquisitions under urgency, to be completed within six months of the land acquisition process, with the intention of determining whether the project will benefit the public, ensuring consent and approval is obtained from the affected population, assessing if alternatives have been considered, and most importantly to develop a rehabilitation and resettlement plan for the displaced population. The process of obtaining consent requires identifying the affected population and convincing them of the benefits of investment.²³

It is observed that 30 to 40 percent of consent givers agree, another 30 to 40 percent are not opinionated while remaining 20 to 30 percent are unhappy about losing their land resources.²⁴

2.2. Displacement

The multipurpose projects in the Damodar valley had envisioned agricultural development and industrialisation along with modernisation of a tribal area through the provision of jobs, growth of service sector, education and technical skill development besides irrigation facilities and electricity generation in the two states of Bengal and Jharkhand. In case of river Damodar in the Chota Nagpur plateau, the large quantity of sand deposits in the DVC reservoirs reduces the life span of the dams; largely due to the rapid pace of mining-based industrialisation and urbanisation.²⁵ Mining has not only changed the land-use pattern in the region, degradation of land has led to physical and occupational displacement of people.

More than a million people have been displaced due to coal mining between 1950 and 1995. Environmental Impact Assessment (EIA) reports of mining companies at times fail to provide the exact number of displacements; many a times the accounts of rural dwellers convey the cases of displacement due to mining and related activities.²⁶ In 1953, when the Damodar Valley Corporation (DVC) acquired 41,000 acres of land mostly from the indigenous communities in the districts of Dhanbad, Jamtara and Purulia and erstwhile Bardhaman district, close to 70,000 people were displaced. These displaced persons with loss of land, house and livelihood were not adequately compensated, neither were they absorbed into the production units - only 350 persons had received compensation and jobs. Years later in 1992 the Supreme Court's directives to the organisation in favour of compensation for some of the displaced persons who had appealed to the apex court did not see full implementation.²⁷ Further, in 2011, rehabilitation plans for some mine areas were still awaiting enactment.

Eastern Coalfields had acquired about 30,000 acres of land in Jharkhand between 1980 and 1985, displacing more than 32,750 families, whereas only 11,901 displaced people could be offered jobs (Areeparampil 1996). 11,909 hectares of forest land (more than half of the total land area) and 26,576 hectares of non-forest land (mostly agricultural - close to 35 percent of total area) were acquired for coal project in the Karanpura valley of Jharkhand. This project of ECL in Jharkhand displaced about 6,000 people from seven villages²⁸ and affected another 15000 people in different ways through the manifestations of environmental pollution due to mining activities²⁹. There was loss of tree cover and shift of settlements, in addition to build-up of wastelands. A rural population of 101,360 persons is vulnerable to displacement in the Salanpur block situated in the western peripheries of the Raniganj Coalfield³⁰. 13,498 people consisting of 2,162 families were displaced in the Sonapur Bazari Mine Area in the eastern part of the study area. From Sonapur Bazari 482 people have been rehabilitated to the Hansdiha Rehabilitation site near Jamuria, about five km away from Sonapur Bazari.³¹ Other rehabilitation sites are located in Mangalpur (near Raniganj), near Kalla, Jamuria and Asansol.

Field survey conducted from 2018 to 2021 with a sample size of 150 respondents helped in understanding the nature of occupation, major causes of in-migration and out-migration and challenges of resettlement and rehabilitation of population displaced during land acquisition for coal mining operations. Five collieries with OCPs namely Mohonpur (Salanpur Mine Area), Jambad and New Kenda (Kenda Mine Area), Bhanora West (Sripur Mine Area) and Sonapur Bazari (Sonapur Bazari Mine Area) were studied for this research paper using stratified random sampling with the respondents comprising residents (in houses within two to three kilometres of the coal mines) and

workers (at the mine sites). The municipal wards at the fringe of the administrative boundaries of Asansol Municipal Corporation have experienced urban sprawl situated close to a kilometre away from mine sites. In case of operational underground mines located close to such neighbourhoods there is vulnerability to land subsidence with grounds caving-in; whereas in case of open cast mines the localities become susceptible to air and water pollution. The densely populated wards of the Asansol Municipal Corporation are located at a distance of five to seven km from the OCPs.³²

A land area of 50 hectares of the Bhanora west colliery in the Stripur Mine Area (eastern part of the RCF) was acquired for open cast mining and production commenced since 2018. The area has been contracted to private company for a period of five years, with the recruitment of the labourers on contract basis and machines by the private companies; while the administrative and production processes are under the control of ECL. The population owning the agricultural land acquired by ECL were resettled in a residential colony near Raniganj and rehabilitated with work in ECL as stated by local officials of the company; the total number of displaced person in this case remain obscure. The blame game between the state-run companies and project affected persons still continue as many mention that the compensations are not sufficient. The reparations for the losses are expected to be equitable and just, more so when the R&R plan targets completion within a span of ten years. Displaced population are resettled within a distance of ten kilometres from the core zone to facilitate their occupational engagements and also to ensure the areas reclaimed for the rehabilitation sites are less prone to the hazards of mining in terms of change of physical landscape through land subsidence, mine fires, infrastructure collapse and pollution from mine operations.³³

Census Towns' (CTs) residents and villagers dwelling in close proximity to the OCPs, place legal and ethical responsibility on ECL for resettlement and improvement of their livelihood. Ground instability, distorted land configuration, water and air pollution are prominent problems in these open cast mine areas that sometimes force people to migrate to nearby areas providing employment at iron pigment and ingot manufacturing plants, refractories, brick kilns near open cast coal quarries. The perception of local people reveals that in-migration of labourers is likely to increase owing to the potential of work opportunities in mining and allied sectors that provide higher household income. Out migration from mine sites would expectedly decrease unless land is unstable, hazard-prone and clustered with abandoned mine sites. The development of mining projects improves connectivity and linkage between villages and Census Towns due to the construction of roads for transportation of coal from mines to production units. Skin and dust allergies, sunburn, respiratory ailments and gastric issues are common health problems that people suffer from in open cast mine areas; cases of respiratory troubles have higher incidence in the winter months with water borne diseases raising the number of patients in summer and monsoon season.³⁴

3. Livelihood and Hazards

3.1. Mining and Work

The coal mines in West Bengal, during nationalisation of mines between 1972 and 1975 stretched over an area of 10,000 square kilometres across Raniganj-Asansol, supporting about 30 percent of coal consumption in India.³⁵ The industrial belt of Durgapur-Asansol-Hirapur-Chittaranjan provided the largest employment in mining sector in the growing urban area located in an agriculturally lesser productive region. The closing decades of the twentieth century however, saw lack of upgradation of technology and paucity of new investment; this together with failure of engagement of man-power in

the production process³⁶ – the objective of establishing the Damodar Valley region as an employment generating region gradually ceased to bring positive result, until the introduction of the Sick Industries Companies Act 1985,³⁷ economic reforms of 1990s,³⁸ amalgamation of steel plants in the region with Steel Authority of India Limited (SAIL) in 2006.³⁹

The majority population in the Raniganj Coal region of Damodar Valley is dependent for their livelihood either on the coal mines and allied industries such as cement, sponge iron, alloy, refractories, poly-fabric factories, or the brick kilns. More than 60 percent of the population work as laborers and construction workers. The people residing in the area face challenges such as water scarcity and lack access to some of the basic infrastructure facilities like clean drinking water, education, health and sanitation which still lurk in poor condition. More than 67 percent of the employment in the region is in construction labour or mining labour followed by service in Government and private sectors (approx. twenty percent) and service (approx. five percent) and other occupations.⁴⁰ The nature of job remains contractual for labour in extractive industries, service, self-employment and seasonal in agriculture.

Industries cover about 91 percent of the coal consumption of the country, out of which 60 percent comes from the Chota Nagpur region. Three production plants of the Steel Authority of India Limited (SAIL) are located on the banks of Damodar – Bokaro, Burnpur and Durgapur and these steel plants account for a large part of the coal requirement and dependence of the country on this eastern region.⁴¹ Despite being an important employment provider in the area the employment potential of mining tends to become less owing to some of the wasteful methods of mining that turn large areas derelict and closure of mines wreak havoc for workers. The problems of mining activity in the region are low productivity, uneconomic size of mines per worker, high transport cost of coal to market. In 1980s the demand of structured and coordinated development led to the commissioning of local planning and development authorities in the area.⁴² The vast expanses of open cast mines on the surface make such landscape easily accessible for coal collection during pilferage. Collapse of roofs of exposed coal seams, or chunks of coal falling off, often lead to accidents and life losses of people indulging in unsafe, informal mining and unlawful coal collection. Pilfers collecting coal unlawfully are often reported with accidents and loss of life by police and ECL authorities in Salanpur, Barabani, J.K.Nagar, Kunustoria, Jamuria, Ukhra, Laudoha, and Pandeshveshwar extending from the western part to eastern part of Raniganj Coalfield respectively and upto Birbhum border in the north and Bankura district border in the south⁴³. After one such tragic case in January 2022 in Laudoha in Durgapur Subdivision in the Raniganj Coalfield region where a Bauri family of four out for collecting coal from an open cast pit perished when chunks of coal fell on them.⁴⁴ Many such mine areas currently outsourced to private mining companies for extracting coal can only be cordoned off in parts to prevent local villagers and migrant workers from entering risk zones. Reports state that close to hundreds of villagers from Birbhum district enter the mines for lifting coal unlawfully despite the dangers to their life and some carry back coal in carts and bicycles back to their villages.⁴⁵

Mines are reserves of wealth accumulation and hence form the foundation of extractive economy. The expanses of mineral reserves that traverse across numerous territorial boundaries induce migration and movement of workers for either employment in mines and ancillary industries or else finding livelihood in informal mining which provides easy procurement of coal at the cost of greater life risk and environmental threat. In the initial years of coal mining, labour had been struck by low wages, circular migration and lack of social security. With the proliferation of industries in recent times labourers are found settling down near Census Towns that are mostly mining towns. Years of extraction, weak stability of land and fragile ecosystem result in mine areas being abandoned

– the representatives of *Bhumi Uchhed Committee* voice that in the situation that any mine pit stop operating, the villagers dependent on the income of the workers engaged in the mines and ancillary industries lose earnings.⁴⁶ The gradual change of urban scape raises concerns of sustainability and work safety because indulgence in informal mining often gives way to hazards, thereby prevention and rehabilitation becomes difficult. Acquisition of land, lack of efficient resettlement and rehabilitation schemes, inadequacy of social assurances for labour, pollution from extractive and manufacturing industries have placed the sustenance of the mineral economy and river ecosystem in the region under question.

3.2. Mining Hazards

3.2.1. Land subsidence

Mine areas namely Haripur, Kenda, Kajora, Sanctoria, Bhanowara, Kunustoria, Parasia, Sankarpur, Siduli, Khandra, Chak Bankola, Kendra-Khottamdih, Bahula have underground and open-cast mines and are Census Towns with population higher than ten thousand residing in each⁴⁷. The New Kenda colliery in Kenda mine area that stretches across an area of 7.95 km² as a case study revealed impacts of hazards of coal mining such as land subsidence and mine fires. Mine blasting at the open cast pits has resulted into cracks in many buildings with roof collapsing in eight to ten houses. The month of September in 2021 recorded 39 percent excess rainfall in West Bengal with the industrial region of Asansol and Durgapur experiencing flood like situation;⁴⁸ cases of waterlogging and land subsidence were outcomes of the incessant rain over a short period of time of two days in open cast mine areas. Although the Public Works Department of West Bengal (PWD) provides piped connection for water supply, the availability of clean drinking water becomes a crucial problem during flood and the prices of packaged drinking water shot up many times at a time when water requirements were crucial. The closest health centre Bahadurpur hospital is five kilometres away from the New Kenda colliery. A daunting task of two to three months of levelling land by loaders came to the relief of the local residents near collieries.⁴⁹

The migrant workers (an estimated 30 to 40 percent of the workers in the area are migrants) find economic engagement in the small and medium scale production units of cement, poly-fabric, kiln brick and sponge iron factories (approximately there are 19 in number with 12 to 14 sponge iron and cement industries) surrounding the New Kenda colliery and settle down in abandoned ECL quarters and slums developing in the abandoned mine premises.⁵⁰ The condition of buildings and numerous pockets of unstable ground pave the path to possible displacement of local residents ousted from their land due to incidences of land subsidence, structure collapse and outbreak of mine fires. Unstable land plots and even patches of grass covered ground that breathe out smoke are prone to collapse and land subsidence, pushing a population of more than thousand into the dangers of life loss and accidents. The small scale agriculture that villagers can practice is affected by land subsidence because villagers living in adjacent areas have to often move away for safety. In cases of occurrence of land subsidence, residents and villagers living around the open cast (operational) and underground mine pits (abandoned) are temporarily shifted to schools and/or vacant residential quarters and most of the affected families then apply for rehabilitation schemes. Incidences of land subsidence are very common and are at times recorded in 30 to 45 days and the unstable ground plots are cordoned off with only barbed wire fences - a similar case of such land subsidence had occurred in November 2021.⁵¹

The network of abandoned coal mines both underground and open cast as well as operational coal mines running in their vicinity generate a risky environment for villagers residing near coal mines in addition to workers informally collecting coal by engaging in unscientific methods. Volatile chambers with gas escaping continuously are partly exposed on the open ground through development of cracks in ground during land subsidence in abandoned mine areas. Sealing off such stretches of coal mines and awareness campaigns for safety become essential to prevent accidents and loss of life and property that may result from outbreak of mine fires and land hazards at mine sites. In most cases people residing and working within few metres of unstable ground conditions remain unaware of the risks.⁵² Monitoring and surveillance by mining authority become important at such locations.

4. Challenges of Resettlement and Rehabilitation

4.1. Rehabilitation Scheme

Open cast mining is the most efficient mining method for coal seams close to the surface of the earth. Open cast mines branch out over large areas of land and with population growth it has become increasingly difficult for subsidiary coal companies to acquire land for expansion of mine operation and productions. The Resettlement and Rehabilitation (R&R) policy, 2012 of Coal India includes Rehabilitation and Resettlement packages in addition to compensation of land. Coal companies provide R&R package for project affected persons to compensate for loss of livelihood, other than compensation for site of house, residential building, trees, cow shed, cost of shifting, etc. it also includes provision of employment to land oustees.⁵³ Investments are also made for establishing amenities like houses, construction of roads, streets, schools, provision of water, in locations that may require such facilities. The 2012 Resettlement and Rehabilitation (R&R) policy of Coal India includes highest priority for minimising disturbance of the local population while deciding upon expansion of existing or opening of new projects taking into consideration alternate sites and project designs to facilitate rehabilitation plans.⁵⁴ Its structure is of a participatory nature with informed and consultative process for and acquisition for coal mining and allied activities that would generate least disturbance for land owners and affected families. Nevertheless, demand for better suited R&R packages and higher compensation values sometimes give rise to conflicts with project affected persons in which cases mining companies face agitations by such land oustees. Obstruction and resolution or fulfilment of demands adequately gets in the way of expansion of new projects and operation of existing mines.⁵⁵

4.2. Challenges of Resettlement and Rehabilitation

It is known that during British regime the indigenous communities of Bauris and Santhals in the region were deprived of their land rights, which in its own way continued into the post-independence years when industrial and economic planning were prioritised. The provisions of Resettlement and Rehabilitation plan include procedures for compensation of loss of land, employment, assistance to the families of Project Affected Persons with home and shifting or resettling in other locales, community development of surrounding areas, infrastructure development of rehabilitated colonies.⁵⁶ The impacts of resettlement may be observed as 'positive' and 'negative'. Positive outcomes are reflected when people move out of an unstable location, into permanent settlements or planned townships constructed for rehabilitation and have better livelihood opportunities and improved

access to basic amenities. The negative impacts feature as loss of ancestral land, traditional livelihood practices and rift in social bonding. Studies bring out the fact that negative impacts have greater magnitude in the region – these being loss of agricultural land, loss of common resources that were utilised prior to the expansion of mine areas. This makes prioritisation of the rights of local people essential, to save them from encroachment of right to life, clean air and water, health and sanitation and along with protection of land rights. Analysis of the impacts of coal mining on social, economic and ecological capital and preservation of cultural and aesthetic values becomes significant for envisaging the positive facets of development.

Social amenities like health centres and educational and training institutes are not only few in number but also lack good quality of service, hence setting social indicators of development at a low level. The challenge lies in either developing reliant and resilient infrastructure for displaced persons to shift or resettling population from project affected areas to sites that are well-facilitated in terms of protected physical environment and social assets. Planning for livelihood assistance programme and provision of vocational training for unemployed men and women, to empower them with better economic and social status for improved standard of living may be important considerations.

Major issues that ECL face culminate as dissatisfaction, distress, grievances, disapproval and the vulnerable people changing their minds after giving consent to the terms of the land acquisition and R&R plans. If ECL works on a mechanism that can provide work to displaced persons as mining labourer, earnings would improve but it is also anticipated that cases of illegal coal mining would rise specifically along the peripheral stretches of mines that are prone to illegal mining and difficult to keep under strict surveillance. Plantation for growth of vegetation in the overburden dumps is seeing success in most mine areas.

New Kenda colliery had been declared dangerous by the Asansol Durgapur Development Authority and Eastern Coalfields Limited since 1981⁵⁷ owing to the area being prone to subsidence, instability of ground, roof collapse and mine fires⁵⁸; despite many surveys and evaluation of land, structures and buildings - the inhabited colliery in the area is yet to be rehabilitated,⁵⁹ despite a population of more than thousand remaining exposed and susceptible to mine hazard with possibilities of displacement. The Directorate General of Mines Safety (DGMS) stresses on the importance of relocating workers to safe work environments in order to protect residing population from displacement, importance of disaster preparedness, attention to risk assessment and health safety measures.⁶⁰ Villagers living in the Sonapur Bazari area have been resettled two to three kilometres away from the blasting zone of mine into the safe neighbourhoods of Bhalupara, Majhipara.⁶¹

Over the years land acquisition for coal mining had been easier for the mining company because mostly such acquisitions came with provision of employment thus amassing unskilled labour force, which in ways affected efficiency on part of the labour and mine companies incurred losses. Hiring people from selected locations of mine projects still continue because mining operations affect local livelihoods.⁶² However, means to compensate land owners come at the cost of adverse losses to the project due to the option of letting land owners or those being resettled to often choose the methods of compensation most suitable for them.⁶³ This calls for better understanding among the mining companies and those prone to loss of land due to mining projects. Social amenities such as schools, hospitals, water sufficiency still call for greater weightage and more attention along with the fulfilment of criteria for uninterrupted functioning of the mines.

Conclusion

The early years of mining and increase of industrial production were associated with land acquisition, migration and displacement in the forested surroundings of mines. In the recent decades of urban expansion the challenges of resettlement and rehabilitation of rural and urban population have followed in the wake of industrial stagnation and increasing spatial agglomeration and environmental hazards; the urban-industrial and peri-urban locales have experienced both growth as well as deurbanisation of some of the Census Towns (owing to closure of industries and abandonment of mines) in the Damodar valley. The rain induced floods of September 2021 in the basin has enhanced the possibility of land subsidence due to the flooding of abandoned and rat-hole mines as well as the excavated land of open cast pits that remain submerged under surplus rain water unless the excess, stagnant water is pumped out. Therefore, it becomes overbearing that the human population living in the core zone in mine areas are rehabilitated to safer sites by adopting measures that align with sustainable development and safe environment for health. Mitigating the impacts of mining that degrade land and other forms of ambient environment should be looked into through micro studies because of the rapidly changing urban and rural landscape in this planning area under study. The sprawl of extractive economy and open cast mines will on the one hand expedite employment generation but on the other hand, indigenous population and migrants who have settled with work will be pushed out or displaced to look for work elsewhere due to rise in the number of derelict abandoned mines.

Issues of psycho-social attachment and value of landscape in case of land owners threatened by relocation due to land acquisition leads the path to behavioural changes during pre-relocation and post-relocation phases in the way of realisation of rehabilitation schemes. The formidable enterprise of shifting villagers to areas at safe distances from mine blasting operations and pollution apparently appears as a simple way out, however, the recurrence of fulfilment of clauses within the resettlement and rehabilitation schemes are affected with temporal and spatial changes in livelihood patterns and demands of infrastructural growth. Increase of population, migration and the growth of Census Towns adjacent to collieries in the Raniganj coalfield sound the bell of urgency for focussed micro-area management along with holistic urban and environmental planning keeping in mind the economic significance of coal mining in the region.

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