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Dynamics of Coal Mining Caused Environmental Crisis Versus Displaced People's Question of Survival: A Case of Talcher Coal Belt, Odisha (India)

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Received: 6 December 2012 Accepted: 2 January 2013 Published: 15 January 2013

Abstract

It is an unquestionable fact that coal mining not only undermines its affected people and environment, but also adversely affects their interrelationship over the years. In this context, our household survey and field study observation reveal that the entire Talcher coal belt is undergoing a rapid change from its ?culture of ecology? to the ?culture of pollution?, because coal mining operations have not simply disrupted the local peasants' access to agro-economy, and their common property resources (CPRs) i.e. village forests, fresh air, clean water sources, etc, but also have detached them from their earlier environmental ethics and green thinking at present. But, pollution impact has gone to such an extent that the very environment is as if, retreating/revenging the mining affected people in unexpected ways. Many of them now, painfully apprehend the menace of excruciating heat of summer time, tragedy of fly of coal dusts and impacts of land degradation, deforestation, water pollution, etc. But, hard reality is that nobody is damn serious about environmental regeneration, and rather, they are busy adjusting themselves with its degeneration. Thus, this paper reflects on the emerging crisis of human-environmental relationship.

Index terms— coal mining project, common property resources, displacement, environmental crisis, displaced people/ land oustee.

1 Introduction

oal undoubtedly, works like a black diamond among all minerals at global economy. However, coal cannot be clean like other vital resources of nature-land, water and air to which it pollutes profusely. Further, it's extracting and mining projects add environmental costs that negatively affect the age-old human-environmental relationship in coal mining belt worldwide. It is an undeniable fact that the large scale coal mines cannot operate without disrupting the vibrant rhythm of ecology and wildlife habitats everywhere. In this process, the people consequently, those who live in and around mining areas cannot help, but bound to develop anti-environment attitude supporting the mining projects in long run. It is apparent that in order to happen so, the concerned government and mining authorities make deliberate strategies in the name of development in the mining belt. Such strategic environmental crisis and existential dualism are highly visible in the coal belts of Odisha. In this respect, Talcher coalfield, the coal capital of Odisha is increasingly getting into such catastrophic situation.

Talcher coalfield is highly pronounced as one of the most revenue generating regions of Odisha, and of India as well, but has become one of the worst three zones of major 10 environmentally threatened zones in Odisha (Odisha, State Pollution Control Board, 2006). The pollution effects not simply disrupt the local peasants' access to agro-economy and their common property resources (CPRs) i.e. village forests, fresh air, clean water sources etc, but also detach them from their earlier ethics of green thinking and environment-based beliefs and rituals.

After land acquisition and environmental disruptions these peasants were involuntarily dispersed into different destinations for their resettlement. After over decades of their detachment from earlier ecosystems and village atmosphere they have undergone substantial changes in their life styles. Consequently, their requirement and questions of dependency on environment have also been changed. Some of the first generation senior oustees, who had seen the environment of old villages, and had experienced the early pangs and trauma of displacement, though highly critical of ongoing coal mining activities, but still hope of regenerating their relation with the environments in the peripheries (Garada, 2013(Garada, & 2012)). The second/third generation oustees who have not seen earlier green village atmosphere, and have not experienced the early tragedy of displacement, not only have detached themselves from their ecosystems and environments, but also appear to be supporting the coal mining projects directly or indirectly in the process of land acquisition and deforestation in and around the Talcher coalfield. It is not simply the issue of environmental displacement, but also of the displacees' indifference to the environmental impact and crisis at present. So far, many studies/institutions have exposed the tragedy of mining induced human displacement, and environmental pollution worldwide, but unfortunately, hardly any research institution publicly draws world attention to the consequent crisis of human-environmental relationship, which is the worst form of displacements the world has ever seen in the past civilizations. Unfortunately, many studies conducted in India over the years on coal mining caused-displacement problems have hardly touched upon such issues seriously going beyond human displacement and their rehabilitations (Garada, 2013 **??**eher, 2003; **??**hagamwar, De and **??**erma, 2003, Pandey, 1998).

In this backdrop, we have tried to analyze, in this paper, how the mining caused environmental crisis not only reduces/disrupts displaced people's access to common property resources (CPRs), but also results the crisis of human-environmental relationship at Talcher coal belt. This paper has consisted of six main parts such as Part-I consists of introduction, theoretical overviews on development versus environment, and of overviews on coal mining impact on local environment, Part-II consists of background of Talcher coalfield, study area, sample frame, research objectives, methods of data collection and socio-demographic profile, Part-III consists of finding on sample households' access to common property resources and their energy consumption pattern during pre and post-displaced periods, Part-IV consists of finding on the dynamics of coal mining caused environmental crisis and displaced peoples' response with sub-headings such as menacing of excruciating heat of summer time and displaced people's response, water pollution and displaced people's response and land degradation and displaced people's response, Part-V consists of finding on the issue of deforestation/ reforestation and Part-VI consists of a brief conclusion.

2 a) Development Versus Environment: Theoretical Overviews

In the context of increasing global population, urbanization and technological innovation extraction of coal from the earth and its extracting industries' growth cannot be compromised at any cost. Coal not only meets the major portion of energy needs of mankind in the modern world, but also equally contributes to the gross national product (GNP) of any coal resource rich country in the world. However, it adversely affects the physical environment of coal resource rich regions in irreparable condition. Notwithstanding this, the coal rich nation-states, at global level have been striving hard to speed up their GNP growth through opencast mining projects for last several decades. It is also true that any unsustainable economic growth and its consequent fast modern establishments bound to come under the threat of nature's revenge at present. It is now scientifically established fact that the GNP led growth, oriented to a culture of intensive use of energy for increasing production of goods and services, is extremely accountable for significant environmental change such as for example, global climate change, unpredictable rain, tough summertime and the like worldwide (see Garada, 2009; **??**eher, 2003). According to Wolgang Sachs the uncontrolled growth of GNP was once assumed to have turned many people-local or global into the cheerful enemies of the nature in 1980s **??**Sachs, 1997:38). It is alleged that at the cost of environment human materialistic forms of luxurious living have got lifted by the system of modern development (see Garada, 2009; **??**hiva, 1997;Baviskar, 1997;Sachs, 1997). In 1987, realizing this, Brundtland report announced prominently for "the marriage between the craving for development and concern for the environment" but unfortunately, this was never realized in true spirit (Sachs, 1997).

Of course, how and when development would go hand in hand with environment were not yet promoted. Unfortunately, when the questions of whether environmental disaster be tolerated for economic development or human development be adjusted with environmental protection were not resolved, the development specialists argued in 1970s that environmentalism was inimical to the alleviation of poverty and economic growth in the world. On the contrary, they also argue that it is the economic growth which reduces poverty but not environment. Hence, the economic growth is unrelated to environmental degradation. The growth reduces poverty, so as the poverty induces environmental degradation was another consequent argument. But, today human being wants both-reduction of poverty and protection of environment (ibid: 39).The activists and environmentalists argue that poverty has never been the enemy of nature. Rather, in the process of contemporary massive mining operation and huge industrialization, the poor of the resource rich regions will be aspiring urban life style and would be the future agents of environmental destruction (see Garada, 2013 **??**hagamwar, De and Verma, 2003; **??**hiva, 1997).

But why do humans destroy the ecosystem, of which they are active parts, is an ecological query. That engages debate and deliberation involving more significantly the human exemptionalism paradigm (HEP) on onside, and the new ecological paradigm (NEP) on the other, worldwide (see **??**altenborn, Bjerke and Strumse, 1998;

??unlap and Van Liere, 1978, www.environment.gen.tr ? Environment Writings). While the former paradigm views that human-environmental relationships are sociologically not important because humans are 'exempt' from environmental forces via cultural change, the latter paradigm views that humans are still ecologically interdependent with other species. But knowingly the latter's view the people in general are more conditioned by the modern cultural changes than by the corresponding changes of nature. This also gives rise to another controversy. While one group of intellectuals blame modern capitalism as the culprit for all the environment problems, and for the crisis of ecosystem people, another group argues that we should take the benefits of modernization and industrialization keeping ecology in mind (reflexive modernization) (see ??aviskar,1997; ??eck, Giddens and Lash 1994; ??usicdoc.org.uk/cspt/documents/issue2-1.pdf). Thus, the dialectic of modernity versus reflexive modernity is looming large in the contemporary society. However, nothing could obstruct the forces of disruption to environment/ecology worldwide. For instance, the argument of "ecological modernization" developed in 1980s could not guarantee the check of environmental degradation worldwide (see Foster, 2002; ??isher and Freudenburg 2001;Baviskar, 1997). Even, the Marxism versus neo-Marxism controversy is not left behind in this regard. While the former views that the crisis of ecology and ecosystem people is due to labour, capital and state conflicts over production the latter views it is due to capital, state, labour and environmental conflicts. Thus, all these paradigmatic dialectics as if, celebrate their epistemological discourses, but in dilemma, dualism, so on and so forth without coming to a green peace resolution. Actually, what's required is an ecological approach to human development or more importantly "social ecology" or "human ecology". In fact, the environment is the surrounding that influences growth and development of living and non living organism inclusively. The Indian conception of nature is 'Prakriti' which permeates every stone, tree, fruit and animal and sustains them combined with the human World .

Vandana Shiva argues that since Prakriti grants the blessing of nature as gifts must be honoured and worshiped. Thus, gradually the social ecology is the emerging need of the hour. Unfortunately, all this existential dualism may be contextualized in virtually any mining belt where in fact, the interlocking humanenvironmental relationship has been highly damaged, disrupted and ruined or in the verse of destruction by the mining projects.

3 b) Coal Mining Impact on Local Environment: Overviews

In above backgrounds, according to environmentalists, coal mines especially, opencast coal mines have been disrupting human-environment relationship causing wide range of environmental problems such as, for example, air pollution, water pollution, noise pollution, land degradation, desertification of lands, deforestation and soil erosion and above all increasing miseries to displaced/affected people in the long run (Garada, 2012; ??hagamwar, De and Verma, 2003; Victor Munnik, 2010; ??hatua and Stanley, 2006; ??zeigbo and Ezeanyim,1993). Our review of literatures demonstrates that the environment and ecosystems in and around the coal mining industries have now been irreparably impacted (see, Maiti and Maiti, 2007;Sarma, 2005; ??hagamwar, De and Verma, 2003:194-204;Keating, 2001; ??ernandes and Paranjpye, 1997; http://moef.nic.in/downloads/publicinformation/EIA-Summaries.pdf). In fact, both opencast and underground mining projects adversely affect the people, society and environment. But unfortunately, the sustainability of environment is not prioritized over the prospect of former in the logic that coal has many significant uses worldwide. In the process of mining operation the human-environmental relationship gets disrupted not only in the industrial center, but also in the periphery where displaced ecosystem people live in. In macro global economy, local people are compelled to participate in environmental destruction imposed by mining and industrial houses beyond their control, because they are reduced to move as resource suppliers in periphery for the urban centers ??Meher, 2003;Garada, 1995; ??hiva, 1997: 276-292;Sachs, 1997). The people's local stability and ecological harmony are undermined as the forced relocation throws them out of their familiar common social and geographical resources such as ponds, wells, grazing lands, forests, community centers, panchayat/village meeting spaces, temples, etc. Further, the loss of familiar social and geographical surrounding put the PAPs into despair and detached them from their universe of meaning that was attached to their rural settings in the past (Garada, 2009, Kibreab, 2000: 293-331, Dhagamwar, De and Verma, 2003: 189-212, ??hiva, 1997).

4 II.

5 Background of Talcher Coalfield

Talcher coal belt is one of the fastest growing industrial complexes of India. Talcher coalfield (1860 sq.km area) is located in Brahmani valley to the north of Mahanadi River in the Talcher block of Angul district, about 120 km away from Bhubaneswar, the capital city of Odisha (MCL, Archives, 2007:16.5, 19.2). As per the 2001 census, there is a total of 143603 population, of which 16 per cent belongs to scheduled caste and 7 per cent belongs to scheduled tribe in Talcher block (District Statistical Hand Book, Angul, 2009). Brahmani river and its tributaries namely Singhra, Tikiria and Nandira are the main water sources flowing at Talcher locality. Talcher coalfield comes under Mahanadi coalfield limited (MCL), a public sector coal subsidiary of Coal India limited (CIL). It was established on 3rd April, 1992 with its headquarters at Sambalpur. It has acquired Mini Ratna Category-I status on 15.3.2007 for its better performance in term of coal production and profit generation (MCL, Archives, 2007: 5.6). A huge noncoking coal deposits suitable for thermal power plant attract the prospect of coalmining projects at Talcher-Angul belt. Talcher coalfield has eight opencast and three underground coal mines in its five

coal areas namely Jagannath area, Bharatpur area, Lingaraj area, Except some fortunate employed people who are living in MCL quarter with all civic amenities all other non-employed land oustees (displaced people) are now feeling deprived and powerless surviving in project made resettlement sites (Handidhua resettlement colony, Central temporary colony and Kuiojungle resettlement colony) and self-settled clusters (Pabitrapur cluster and Rodhasar cluster). The displcees prior to their displacement, used to practice their sustainable agro-economy, allied activities and hereditary occupations for their livelihood in their old villages. Now their sustainable sources of livelihoods have been destroyed by the coal mining operations. However, they have improved their annual incomes, and have changed their life style over the years (Garada, 2013). Our study reveals that the post-displaced socio-economic status of sample households has changed their demographic profile at present. The marital status, number of widow/ widower, number of old age people above 60 years and literacy rate of sample households have been increased at present as compared to that of their pre-displaced periods (seeTable-3). But the number of un-married oustees and of young population (0-18) and average family size of sample households now have been decreased as compared to that of their pre-displaced periods. Our study reveals that increased money income, cash based compensation, marital status as eligibility criteria for rehabilitation and resettlement package, etc are some of the important factors responsible for changing the marital status of sample households from 53.94 per cent in pre-displaced period to 57.24 per cent in post-displaced period. In our focus group discussion however, some senior oustees acknowledge the impact of mining caused urbanization, and of establishment of numerous schools in and around Talcher coal belt for their increased literacy rate at present. But most of them explain that this is not a new thing. As they argued that Talcher coal belt was among the high literacy regions of Odisha even before their displacement period. This change explains the reason for a marginal improvement found in the sex ratio of the sample households in post-displaced periods (seeTable3). It is also be true that as a result of dowry demand, many unmarried daughters are residing in their parental households at present.

6 III.

Finding on Loss of Access to Common Property Resources Our study reveals that almost all sample oustee families used to access all type of common amenities and common property resources as mentioned in the Table 4 before their displacement. Now, very less numbers of them ranging from 10 to 28 per cent access the resources that include village trees, community forest, government forest, grazing grounds, threshing grounds, village sitting spaces, play grounds, rivers, springs, water streams, ponds, tube wells, and cremation grounds. IV.

7 Finding on Dynamics of Coal Mining Caused Environmental Crisis and the Displaced People's Response

The question of air pollution, water pollution, noise pollution, land degradation and deforestation has been established in Talcher coal belt as many studies, reports, and government institutions reveal this fact (Reza and Singh, 2010, Garada, 2009, Pandey 1998, http://angul.nic.in/index.htm). Because of the fact, the central pollution control board (CPCB) in 2010 declared Talcher Angul belt as one of the 23 most polluted industrial complexes of the country. Now, it is observable that the whole atmosphere of Talcher coal belt seems to be fed with toxic coal dust, toxic coal smoke and toxic coal waste every moment. Further, it seems that the environmental crisis is, as if, retreating and revenging the local people in unexpected ways.

8 a) Menacing of Excruciating Heat of Summer Times and Displaced Peoples' Response

Talcher is increasingly found to be one of the hottest spots in the entire country. Recently on 24th May 2013 12:23 PM Talcher coalfield was recorded highest temperature (47.2 degree celcious) in the state (The New Indian Express, 2013). During field study 2007-08 we observed extremely hot days in Talcher coalfield. The people of Talcher coal fields quite painfully apprehend the menace of excruciating heat of summer every year. The scorching sun and its heat wave just before midday (from 10.30 AM onward till 3.30 PM) to the end of afternoon are unbearable. It is very difficult for the local people spend their summer time as they daren't turn out to carry on their everyday business bareheaded under scorching sun nor do they take as usual rest at home due to humidity, sweating and frequent power cut. The entire Talcher town, government offices and public market remain inactive during summer days. Even, then there was no pollution watch board for the information and public scrutiny of everyday pollution in the locality. However, the MCL authority claims that they supply the On the other hand, though many of the sample households ranging from 64 per cent to 73 per cent or more access the community resources i.e. defecation grounds, common wells, community centers, festive locations, temple/deity structures and sacred spaces at present, they have almost lost the earlier strategy/service of their collective stake and management over such CPRs. Our study also reveals that comparison to their old villages the project affected sample households did not have more community amenities at present locations. The PAFs desperately miss their earlier large size, and more number of cremation grounds, ponds and festive locations at their present resettlement sites. It seems that their dependency on common property resources is declining fast over the years. It is further, found that increasing deforestation and money incomes have changed the PAFs' fuel consumption pattern at present.

9 b) Energy Consumption Pattern of Displaced Households

In pre-displaced year 76 per cent and 21 per cent of the households used woods and coal respectively. as their main cooking fuels in their houses. But, at present, it is 12 per cent and 39 per cent respectively. Use of coal as cooking energy has been increased. Most importantly, use of Liquefied petroleum gas (LPG) for cooking purpose is about 30 per cent at present. Thus, the PAFs after passing through decades of their indifference to mining caused deforestation, did not like to depend on the forest for the consumption of fuel hoods at their kitchen. The PAFs also express that since their kitchen no more rely on forests and forest products they are moving toward urban market for all type of consumptions at present. Our study also reveals that resettled PAFs more often fall in conflict with the local people sharing the forest resources in and around the resettlement sites. In this respect, the PAFs have not only lost their earlier access to CPRs, but also have undergone the adverse effects of coal mining caused environmental crisis over the years. How can they come out from the ongoing environmental crisis is a serious question at present? water sprinklers to cool the atmosphere on the roadside whereas the government people claim that they encourage for water depot and sunstroke treatment in an emergency basis. The district government authority also argues that the Talcher is not exception to the global climate change, and thus soaring temperature anywhere is a global phenomenon. The people argue that they are also not less responsible for this, since they have allowed industrial houses to pollute and destroy their environment and ecosystem. But about 90 per cent of the sample households do not complain against the concerned government authority for such problems. Many of them are quite indifferent to the increasing temperatures and instead, busy using electric fans as if, they do not have any role to play. It seems that though, they are helpless but simple accept what government will do for them at this moment.

10 b) Water Pollution and Displaced Peoples' Response

The coal dusts, waste waters from domestic sources, industrial workshops, coal stockpiles and mine flow, mine discharge water, etc pollute the water sources at Talcher coalfield. Suspended coal powder, fly of coal ash, solids of coal, clay and oil are the important pollutants. As a result, local river Brahmani with its tributaries-Tikira, Singrajhor and Nandira has been highly polluted. Now, it has become the most contaminated river of the state. In our focus group discussion senior displaced people argue that the people who use the polluted water from this river are suffering from skin diseases, tuberculosis, cancer, etc at present. Their domestic animals also suffer from different diseases, and even die after using polluted water. They are compelled to drink filter water or tank water, and no more feel safe to use water from open sources for their domestic needs. But, so far, surprisingly, no effective remedial pollution control measures have been taken up by the government authority to free the water sources from the industrial pollutants. The available few dug wells and tube wells are also polluted and remain dysfunctional throughout the year. Our study reveals that the displaced households hardly complain formally to the concerned authorities for making functional of their water points, thinking it is the government authority's work to look after. For instance, about 61 per cent of sample households express that they have never taken any steps to repair the dysfunctional wells, and hardly know how mining operations destroy the water level of the locality. Even, many of them do not want to know it except how they will they get tank water facility at present.

11 c) Land Degradation and Displaced People's Response

Mining caused land degradation and landlessness have reduced the peasants into the project affected families. The project affected families are also not very keen to revive their land-based living. At present situation the open cast mining project OCMP severely degrades the land with no hope of land reclamation (Garada, 2009). Loss of vegetation due to mining, siltation around the mining dumps pits/ excavation, waste dumps, soil erosion, etc are main causes of land degradation. But the MCL authority did not have any visible strategy for land reclamation and afforestation programme. For instance, out of total 1859.31 hec mine used lands only 44 per cent has been reclaimed, and 57 per cent has been backfilled. In my studied mine in Bharatpur OCMP, out of total 341.18 hec of mine used lands together, only 25 per cent has been reclaimed, and nearly about 13 per cent has been backfilled till 1/4/2006 (MCL Archives, 2007:17.18). In case of Jagannath OCMP out of total 363.16 hec of mine used lands only 51 per cent has been reclaimed, and 48 per cent has been backfilled (ibid). The PAFs argue that the reclaimed lands should have been utilized for development of agriculture, forestry, wildlife habitation and the activities of recreation in the locality. However, our study reveals the land oustees' dualism and dilemma on the question of reviving the agro-economy at present. As for instance, many oustees argue that they do not have lands for cultivation, other argue that they have lands but that cannot not be cultivable at present without adequate reclamation and irrigation, and still other argue, even if, agricultural land is available somewhere, they feel it will not generate good livelihood option for them at present. It is also fact that land degradation is very high in the mining areas, but not so in the peripheries where the land oustees have been resettled.

For instance, the resettlers in Pabitrapur selfsettled cluster have barren/inferior lands but not degraded lands. In Handidhua resettlement colony and central colony the land oustees do not have any landed properties. The PAFs in Kuiojungle resettlement site do not want to develop their forest lands for agricultural purpose. In the Pabitrapur self settled cluster each land oustees, though do have lands and also have access to forest area they neither cultivate the land nor do depend on forest resources for their livelihoods. Our study reveals that hardly

anybody is interested in agricultural activities, and almost everybody is attracted toward nonfarm employments at present. Unfortunately, 87 per cent of sample households express that the first generation oustees though wish to continue agricultural activities, but cannot carry on it due to their old age. The second generation oustees cannot do it because agriculture does not fetch them good income or somehow or other they are engaged in industrial and non-farm employments at present. They also wish their present generation to aspire and achieve industrial and other non-farm employments in the future. Thus, the land based-living have been highly affected by the mining industries, and affected people want to pursue their

Volume XIII Issue VI Version I Year 2013 ( ) non-farm based living at present. Thus, it seems that PAFs are compelled or wish to good bye to their agricultural mode of production at this juncture.

13 d) Deforestation and Displaced People's Response

The ongoing deforestation in Talcher area poses great threat to the human-environmental relationship at present. The deforestation is not simply the decisive indicator, but also disastrous factor of environmental crisis everywhere. The truth of mining caused deforestation is open secret in Talcher area. Our review of literatures related to deforestation at Talcher coal belt reveals that as if, there is no forest areas left to be acquired for the future expansion of the mining activities (The Times of India, 2013; **??**houdhury, 2011-12). Acknowledging the facts of deforestation even the MCL authority has mentioned such information in its MCL Archives, 2007. According to MCL Archives total 8357.878 acres of forest land were applied, and total 2151.138 acres of forest land were physically possessed by coal mines for mining operation till 2007 in both Talcher and Ib valley areas of Odisha (MCL Archives, 2007:6.36). When we had our field study during 2007-08 we relied on the government report for our analysis. According to a "state of environment report, Orissa, 2006" provided by Orissa state pollution control board (OSPCB), out of total 1822.086 hac of forest land including reserve forest in the Talcher-Angul coal belt about 27per cent was lost, and 38 per cent was supposed to be lost due to mining activities. It is found from the Table-6 that as much as 106.16 hac of forest lands were completely lost till 2006 due to our studied Jagannath opencast mining project. Similarly, out of 198.171 hac of forest land available before displacement in Bharatpur study area about 33 per cent has already been lost and rest 67 per cent was likely to be lost in the area. **??**8.4). This is what the land oustees repeats an Oriya proverb saying "Sumdra ku Sankhe pani" (need is sea however, provided is merely a conch of water). This is what they feel that they can no more revive their earlier green belt in Talcher area. The PAPs also argued that the trees having food value, timber value and medicinal value should have been planted in and around the affected villages for a better regeneration of human relation with nature. However, the MCL and government authorities have deliberatively enforced the compensatory afforestation programme without seeking PAPs' wish and participation like giving compensation whereas there's no participatory rehabilitation. They complain that the government and MCL authorities have significantly failed to do any things in this regard. It is widely speculated in the area that the MCL authority deliberately showed a standing of healthy forestland over actually mining degraded forestland in the official record, so as to keep away from controversy. Further, due to massive deforestation in Talcher locality some wild animal like elephants come close to the village sites, and raid crops and disrupt human habitations and domestic animals there (http://angul.nic.in/forest.htm # district environment).

Other wild animals like tiger, leopard, bison, sambar, barking deer, spotted deer, wild boar, sloth beer, pangolin, civet cat, porcupine, mongoose and snakes like python, cobra, etc are not seen nearby the villages thanks to huge deforestation in Talcher vicinity. The floras like piasal (pterocarpus trijuga), sisso (dalbergia), gambhari (gmelina), kurum (Adina cordifolia) and specially aonla (phyllonthus emblica), mahua (bassia latifolia), kendu (diospvros) are reducing fast while sal (shorea robusta) and other shrubs are increasing in proportion (Garada, 2012, http:// angul.nic.in/ forest.htm # district environment). The affected people argue that their forest resources like timber, fodder, fuel-wood, bamboo, kendu leaf, medicinal herbs (ayurvedic) amla, char, etc have been destroyed by the mining operations, and other are on the verse of their destruction. And despite this, the resources that are not however, being destroyed are restricted by the forest department for people's access at present. As a result, the plight of leaf pluckers, seeds collectors and fruits gatherers has been aggravated at present.

V.

14 Issue of Deforestation and Reforestation

While some senior land oustees remind themselves of the lost crunchy and green leaves they used to see in and around their villages, other oustees lament of some useable produces like leaves, seeds, fruits, nuts, oil, etc, that the lost trees were being endued with at their old villages. Still other argues, since they stay in the rural areas, it is hard to live without forest and its leafage that tidy their air and stabilize their ecosystem. But hard reality is that hardly anybody is serious about the reforestation of Talcher locality. It is clear from the Table7 that about 90.82 per cent of total sample households blame mining and industrial projects for deforestation, and 44.95 per cent and 45.87 per cent of them wishes government and mining/industrial authorities should take care of the activities of reforestation respectively. While only 9.17 per cent of the households blame themselves for

deforestation, only 4.59 per cent of them feel that they are responsible for the reforestation. We also find that the people living in cluster, colonies and MCL quarters, and gender and age specific groups, have different opinions regarding the questions of who is responsible for deforestation and reforestation in Talcher coal belt. But hardly anybody strongly think that they are not less responsible for both deforestation and reforestation of Talcher coal belt at present. Further, we can observe from the Table -8 that only 1 per cent of the sample households still depend on forest for their livelihood, and nobody want their younger generation to depend on the forest for the same. It is also observed that though 27.52 per cent of them wish their younger generation to depend on forest for fodder/fuel woods/timber, etc but as much as 72.48 per cent of them do not want their younger generation to depend on forest in future. In fact, it is quite observable that still land oustees exploit forests for their household need of fodder/fuel/woods/timber, and for their agricultural and allied activities. Now, PAFs are enmeshed into their existential dualism and dilemma since they neither able to sustain their environmental ethics to protect their forests because they still bargain compensation on forest land acquisition on coal mining expansion nor do they ignore it because, still they need forest based-living at present.

15 VI.

16 Conclusion

It is a naked truth that pollutions and pollution effects are now inevitable phenomenon since pollution sources have already been set in and around the Talcher coal belt over the years. The question of water pollution, air pollution, noise pollution, land degradation and deforestation have been redundant now, and instead of, it is increasingly facilitating toward a culture of pollution to which somehow or other affected people figure out how to fine-tune with it living in and around Talcher coal mining industries. But pollution impact has gone to such an extent that the very environment is as if, retreating and revenging the mining affected people in unexpected ways. Many of them now, quite painfully apprehend the menace of excruciating heat of summer every year. It is very difficult for the local people spend their summer time as they daren't turn out to do their everyday work under scorching sun nor do they take as usual rest at home due to humidity, sweating and frequent power cut. But dilemma is that many of them are indifferent to the increasing temperatures, and in lieu, busy using electric fans, as in such situation they think that they are helpless, and do not have any role to play. Now local mining affected/displaced people greatly miss earlier fresh water sources for the purpose of their drinking, bathing and domestic uses. But they hardly take any collective initiative to repair the dysfunctional water points, and do not want to know how mining operations destroy the water level of the locality. As a result, they suffer from malaria and different skin diseases after drinking polluted waters of open sources. Many of them also perceive that in addition to pollution impact, now the cause of their frequent illness perhaps not consuming pollution free green leaves, vegetables and different such food items which they used to obtain from their kitchen gardens and agricultural fields before displacement. Now, the mining caused land acquisition and land degradation have reduced the land oustees into the project affected families (PAFs). But unfortunately, they are also not very keen to revive their agricultural activities. Now many of them argue that they do not have lands for cultivation, other argue that they have lands but that cannot not be cultivable at present without adequate reclamation and irrigation, and still other argue, even if, agricultural land is available somewhere, they feel it will not generate good livelihood option for them at present. It is also fact that land degradation is very high in the mining areas, but not so in the peripheries where the land oustees have been resettled. However, some senior PAPs suggest that they should be given back the reclaimed mine used land and backfilled lands for their cultivation in the peripheries. But, it seems that the MCL authority did not have any visible strategy for such constructive progarammes.

The entire deforestation and compensatory afforestation strategy of MCL and government are highly criticized by the local people. Every mining affected people argue that since they stay in the rural areas it is hard to live without forest, and its leafage that tidy their air and stabilize their ecosystem. All seniors land oustees feel that their loss of access to common property resources cannot be compensated by any means of rehabilitation and resettlement programme. But, hard reality is that nobody is damn serious about the reforestation activities in Talcher locality, and none of them strongly think that they are not less responsible than any mining project for the ongoing environmental crisis and their suffering at present context.

In order to reverse back the normalcy of ecosystem at Talcher coalfield some concerned stakeholders plead to cease the entire ongoing mining and industrial activities which is impossible now. It is also impossible to regain displaced people's access to their earlier common property resources. But, when coal resources will be exhausted and coal mining will be closed down, there will be no options for them but to regenerate the entire affected environment and ecology. At this juncture, the displaced people in particular and local people in general are not only dialectical on the queries of development versus environment, but also equally suffering from their crisis of existential dualism/dilemma. Our review of literature reveals that development and environment cannot go hand in hand. Unfortunately, thus, the question of whether environmental catastrophe be tolerated for economic development or human development be adjusted with environmental protection cannot be resolved. Therefore, the ecological question of why humans destroy the environment/ecosystem, of which they are active parts, is justified to some extent.

401 # 17 VII.

Figure 1:

1

Year 2013

Figure 2: Table 1 :

402 1 2 3 4 5 6

[1]A Case of Talcher Coal Belt, odisha (India)
[2]© 2013 Global Journals Inc. (US)
[3]Sex ratio948.84 977.95
[4]A Case of Talcher Coal Belt, odisha (India)© 2013 Global Journals Inc. (US)
[5]( )B
[6]20 2 43

2

Sl. No.	Caste	Surveyed Households
1	OBC	66(60.55)
2	SC	40(36.70)
3	General	3(2.75)
Total		109(100.00)

[Note: NB: Figures in Parenthesis denotepercentage. Source : Household Survey 2007-08.]

Figure 3: Table 2 :

3

SL.No.	Demographic Particulars	Pre	Post
1	Population		
1.1	Male	606(51.31)	499(50.56)
1.2	Female	575(48.69)	488(49.44)
	Total	1181(100.00) 987(100.00)	
2	Age structure		
2.1	Young (0-18)	423 (35.82)	254(25.73)
2.2	Adult (18-60)	623(52.75)	532(53.90)
2.3	Old Age (60+)	135(11.43)	201(20.36)
	Total	1181(100.00) 987(100.00)	
3	Marital Status	Pre	Post
3.1	Married	637(53.94)	565(57.24)

[Note: © 2013 Global Journals Inc. (US)]

Figure 4: Table 3 :

4

Sl.No.	Common Property Resources	Yes (Pre)	Yes(Post)
1	Village trees/ Community forest	109(100.00)	10(9.17)
2	Government Forest	109(100.00)	25(22.94)
3	Grazing ground	109(100.00)	29(26.61)
4	Threshing grounds	109(100.00)	15(13.76)
5	Defecation grounds	109(100.00)	70(64.22)
6	Village sitting space	109(100.00)	25(22.94)
7	Play grounds	90(82.57)	20(18.35)
8	River	109(100.00)	12(11.01)
9	Springs/ Water Stream	109(100.00)	25(22.94)
10	Common Well	60(55.05)	80(73.39)
11	Pond	109(100.00)	10(9.17)
12	Tube Well	000(0.00)	30(27.52)
13	Festive Locations	109(100.00)	70(64.22)
14	Cremation ground	109(100.00)	20(18.35)
15	Community centers	109(100.00)	80(73.39)
16	Temple/deity space/ holy grooves	109(100.00)	109(100.00)

Figure 5: Table 4 :

5

Sl.No.	Type of Fuel used	Pre	Post
1	Gas	0(0.00)	33(30.28)
2	Coal	23(21.10)	42(38.53)
3	Kerosene	0 (0.00)	6 (5.50)
4	Wood	83(76.15)	13(11.93)
5	Cow-dung	1 (0.92)	0 (0.00)
6	Others	2 (1.83)	15(13.76)
	Total	109(100.00)	109(100.00)

[Note: NB: Figures in Parenthesis denotepercentage. Source : Household Survey 2007-08.]

Figure 6: Table 5 :

6

Sl. No.	Opencast Coal mines	Total forest land including forest	Total forest land lost for mining activities	Total forest area to be lost for mining
1	Balanda	1045.75	245.0(23.42%)	315.0(30.12%)
2	Lingaraj	240.804	6.71(2.78%)	109.687(45.55%)
3	Bharatpur	198.171	65.01(32.80%)	133.161(67.19%)
4	Ananta	146	74.0(50.68%)	82.0(56.16%)
5	Jagannath	106.16	106.16(100%)	
6	Kalinga	85.201	-	60.523(71.03%)
	Total	1822.086	496.68(27.26%)	700.371(38.43%)

(Figures in brackets give percentage estimates of total forest land)
Source : State of Environment Report, Orissa, 2006 published by Orissa State Pollution Control Board, Gov
Orissa.
The affected people are quite highly dialectical on the entire afforestation strategy of mining projects in Talcher coalfield. According to a MCL report till April 2006 only 1349561 plants were planted of which my studied projects had 39.18 per cent only (27.31 % in Jagannath area and 11.87 % in Bharatpur area) (MCL Archives, 2007:17.18). MCL authority claims that the total compensatory afforestation cost paid by the MCL in both Talcher and Ib valley area of Odisha was 98.42 lakh, of which some 16.77 lakh was only in my study area (Jagannath OCP) (ibid:

Figure 7: Table 6 :

7

Sl.No.	Who is responsible	Deforestation	Reforestation
1	Government	49 (44.95)	15(13.76)
2	Mining and Industry	50(45.87)	89(81.65)
3	People (themselves)	10(9.17)	5(4.59)
	Total	109(100.00)	109(100.00)

[Note: NB: Figures in Parenthesis denote percentage. Source : Household Survey 2007-08.]

Figure 8: Table 7 :

8

Sl. No.	Question of Depending on Forests	Livelihoods	Fodder/Fuelwoods/timber	Produce Minor Forest	Forest Not Depending on	Total
1	Status of Dependency	1(0.92)	50(45.87)	10(9.17)	48(44.04)	109(100.00)
2	Younger Generation's future Dependency	0(0.00)	30(27.52)	0(0.00)	79(72.48)	109(100.00)

NB: Figures in Parenthesis denote percentage.
Source : Household Survey 2007-08.

Figure 9: Table 8 :

.1 Acknowledgements

I am grateful to those land oustees who have rendered their valuable services, and had tolerated me answering the lengthy interview schedule at the time of my field study. I am thankful to those erudite scholars who had commented on this paper, and specially Dr.R. Meher

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