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REVIEW ARTICLE

ENVIRONMENTAL PERSPECTIVES OF DEVELOPMENT AND DISPLACEMENT

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ABSTRACT

Economic development entails environmental cost. Striking a balance between the two is a wise theoretical solution. Real world situations are more complex and displacement of human habitats as an offshoot of development process is a case in point. In India, starting from Narmada Valley Project to the recent POSCO exemplified the vulnerability of the oustees and their deplorable life sustenance. Building large dams, mining, clearing forest set the primary objectives of promoting economic growth. Externalities caused by such activities result in degradation of environmental resources and loss of human habitats as well. While such large scale ventures appear essential to ensure progressive development and employment opportunity, the over exploitation of natural resources and the attendant pollution can never be ruled out; besides the affected people are marginalized and stakeholders form the voiceless majority. In this milieu, discussion of the following real stories may unfold the ground reality in India. The Narmada Valley project is still alive and controversies are unresolved yet. Narmada River is the bone of contention between the Government of Gujarat and Narmada Bachao Andolan (NBA) an NGO. The Government claimed that the project would be beneficial in terms of irrigation hydropower (electricity), flood control, drinking water, increased storage capacity on the one hand, and the NGO resisted by indicating the dis-benefits; submergence of land as much as 37690 hectares in Gujarat, Maharashtra, and Madhya Pradesh. There were displacement of 45000 families at full reservoir level, depletion of forests, water logging, problems of earth quakes, and political disputes. NBA, an NGO under Medha Patkar, has been opposing tooth and nail the project for its large scale displacement of people. Right from 1990-91 it highlighted the plight of the oustees and forced the World Bank to withdraw from the project. Gujarat Govt. claims 35000 families have been rehabilitated. NBA challenges it. Pohang Iron and Steel Company, Korea, (POSCO). The project envisages a steel plant, power plant and port. It also requires construction of 300 kms of railway track for transport of ore from mines to factory through forest area. POSCO project, worth US \$ 12 billion, covered 1620 hectare of which 1440 hectare is forest land in the State of Odisha. Additional 2469 hectares of hilly area in Khandadhar were to be brought under mining. According to Government the project will displace only 466 families, about 2,500 people who will be adequately compensated. But the forest area is the livelihood for more than 10,000 to 15,000 people Compensation of Rs. 28.75 lakhs per hectare of acquired land is being offered. Betel farming provides Rs. 10- 17.5 lakhs per hectare per year. The compensation will be equal to 2-3 years of revenue. POSCO cannot employ locals as they are not skilled labors. POSCO may be development but will be development that takes the livelihood of the people for whom the project is meant for. It is a tussle between land based economic growth as against industrial growth. Social Justice propounded by Rawls needs to be invoked in this context. Policy makers understand their 'Original Position' and need to enter into 'Veil of ignorance' to frame rules of forming a fair society towards achieving social justice.

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INTRODUCTION

'Man's power over nature turns out to be a power exercised by some men over other men with nature as its instrument' (Lewis, 1947). Development with scant regard for environment and human wellbeing is unsustainable. Inadvertently most economic activities inflict upon marginalized section of society either by way of depriving

access to natural resources or by displacing them from mainstream of development. Least advantaged section of people is less heard. In an era of inclusive growth, the vulnerable lot needs to be taken care of through identifying their plight and evolve method to uplift them. There exist a number of cases to illustrate the deplorable status of oustees of developmental projects. A few instances may be indicated to discern the predicaments of the victims of projects. Sardar Sarovar dam, the largest in India, constructed over Narmada river is the bone of contention between the Government of Gujarat and Narmada Bachao Andolan (NBA) an NGO. Pandit

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Jawaharlal Nehru laid the foundation in 1961 with the concurrence of four states viz., Gujarat, Madhyapradesh, Maharastra and Rajastan. But the actual construction of dam started in 1985 Benefits from Sardar Sarovar project included Irrigation, Hydropower (electricity), Flood control, Drinking water, Increased storage Capacity Albeit, the stakeholders are four states, the state of GUJARAT is the maximum beneficiary. Gujarat gains 8215 villages get drinking water, 135 towns will receive drinking water, 14% of Gujarat will get water for irrigation, 5456 affected families out of a total of 25000 in Gujarat. Disbenefits include Submergence of land as much as 37690 hectares in Gujarat, Maharastra, and Madyapradesh. Displacement of 45000 families at full reservoir level, Depletion of Forests, Water logging, Problems of Earth quakes, Political disputes NBA, an NGO under Medha Patkar, has been opposing tooth and nail the project for its large scale displacement of people. Right from 1990-91 it highlighted the plight of the oustees and forced the World Bank to withdraw from the project. Gujarat Govt. claims 35000 families have been rehabilitated. NBA challenges it. Mounting cost is the problem. The proposed cost was Rs. 2100 crores in 1979, and it had increased to Rs.27000 crores in 2006. The Narmada issue contains a profound argument about everything-power, powerless, deceit, greed, politics, ethics, rights, environment and entitlements.

### Mining

Industrial and technological development is based on the mineral resources from the mother earth. Unlike some resources these mineral wealth are non renewable and available only in limited quantity. As development proceeds in a rapid pace, consequent over extraction of minerals ensue fast depletion and scarcity. Mining is one of the major revenue generating industry for any country, particularly so for a developing country like India. India stands top in global mining industrial ranking for most minerals (Table 1). It occupies second position in chromite and barites extraction, third in coal and lignite mining. In iron ore excavation India stands fourth in the world and the most benefitted country is China since more than 80% share in iron ore export reaches China. Bauxite, manganese, mica are other major mineral deposits found in abundance in India. State-wise leases for major minerals shows Rajasthan as the state which has maximum area under mining followed by Orissa (Table 2). The state of Gujrat has most number of leases followed by Andhra Pradesh.

The economics of mining industry in India shows a 10.7% annual growth rate, the value of mineral production was 25,000 crore in 1993-1994 and has hiked to 84,000 crore in 2005-06. The major metal, iron ore production has increase from 59.6 million tonnes to 154.4 million tones within ten years. Similarly other minerals like bauxite has risen 6.9%, chromite 10.2% and lime stone 6.2% in their overall production. Major victim of mining is the natural forest area, which is cleared for excavation of minerals (Chandra Bhusan, 2007). Forest Conservation Act had granted clearance right for 34,527 hectares in 1980-1997 about 2030 hectare per year. But in 1998-2005 took a huge leap by diversion of 60,500 forest land for mining and this is about 8650 hectare per year. The next vulnerable are the forest dwellers and tribes who had been living with nature by extracting their livelihood and in turn conserving the forests. Government track record on land

acquisition, displacement and rehabilitation is so pathetic that not even 25% displaced people have been successfully resettled. From 1950-1991, about 25.5 lakh people were homeless for mining industry to grow and are still not fully compensated. Now their numbers are ever increasing in a fast pace that they protest and refuse to leave their land. Huge mineral deposits found under the Indian sub continent makes it the most desired destination for mining industrialists from all over the world. Globalization, government subsidies, cheap labour and lack of stringent laws to protect stakeholders have lead to an upsurge in the arrival of multi- national companies to extract its mineral wealth. As doors have opened for foreign investment in India, in the name of liberalization, opposition has emerged in full force from common man. Loss of livelihood and displacement in huge numbers has lead to tough resistance shown by the stakeholders in handing over their land or selling their land for compensation. Overall picture might portray these industries as development strategies, poverty alleviation mechanism and consequently socio-economic growth of the poor. But reality is otherwise, as illustrated by the stakeholders fighting against the project implementation even when good compensation and displacement benefits are provided. This stand-off can be better understood in perspective by researching an example project like POSCO.

Pohang Iron and Steel Company (POSCO) of Korea has launched a mega budget steel plant in Orissa, presently renamed as Odisha. US 12 billion dollars POSCO project envisages extraction of iron ore, construction of steel plant, power plant and a mini port in the coastal area of Orissa. The proposed project would occupy 1620 hectares for its port-power-steel plant and an additional 2469 hectares for extraction of iron ore or mining. The Indian government has approved the mining site, located in the Khandadhar hills of Sundergarh district of Orissa subverting the Forest Rights Act, 2006. The mining project would displace 12 villages in Keonjhar and many more in Sundergarh districts. It would affect the livelihood of 10,000 to 15,000 people, most of them are forest dwellers and tribes. The compensation package offered is unrealistic and there is no guarantee of employment for the locals, above all the government estimate of the affected stakeholders is low when compared to reality. Such unethical, unsustainable project has raised protests from the illiterate stakeholders that further work had to be suspended till a consensus is reached.

The contested land area is forest area where betel farming flourishes, with an average return of 10 to 17.5 lakh per year per hectare. The compensation offered is 28.75 lakh per hectare and this is only about 2-3 year earnings. Land based economy like betel farming or cattle rearing are labour intensive and provides work for many more who do not own land. This project would affect the livelihood of all these stakeholders and there is no guarantee of job in the steel plant as they tend to employ only skilled work force. Of the proposed 1620 hectares of project site, 1440 hectares is forest land with rich bio resources. The mining site of 2469 hectares of land would also become fallow after extraction of mineral ores. The pact signed by POSCO is for extraction of 12 million tonnes of iron ore within 6 years, purify it and export it to other countries (Sayantan Bera, 2011). A look into economics exemplifies the magnitude of loss to India by allowing a foreign company to enter. The rate fixed for one metric tonne

is Rs 27 but if extracted and sold in open market the cost will be 200\$ (Rs.9000) per tonne and if purified and sold about 2000\$ (90000 Rs) and if converted into high grade iron it would be 5000\$ or Rs 225000. On the whole, POSCO plans to invest only 12 million dollars and go back with 200 billion dollars leaving behind fallow land and broken people. More than this, the magnitude of environmental degradation and deforestation, if estimated, would be monetarily more than the revenue earned by the Government. Thus this project exemplifies a stalemate between environment and development. The awareness of the stakeholders or forest dwellers or nature protectors is to be appreciated that they are joined together in a fight to prevent takeover of their land by POSCO. These people fight against 'development' as they realize this short term benefit is not sustainable and the future will hold only poverty and death if they leave their land. The solution lies in the current proposal by National Mining Regulatory Authority replacing the old bill of 1957 (Mines and Minerals Development and Regulation Act, 1957). The new Mining bill envisages profit sharing provision by the mining companies with the displaced people. The companies are to give 26% shares to the stakeholders, and if not a public listed, then 26% of the profit should be given to the affected people. Analysis of the profit margin for the companies shows a high rate of return even after incorporation of revenue sharing with the stakeholders (Sugandh Juneja, 2011). If implemented the approximate earning would be Rs. 38000 per person per year and the 2.5 million displaced people can cross the poverty line as this amount is nine times the poverty line limit (Rs. 4380 for rural India).

### Bamboo

Bamboo is a grass or a tree? This simple question may seem inconsequential to environment and irrelevant to conservation process. In fact, this change in the naming of the bamboo species has led to a serious environmental problem affecting the livelihood of forest dwellers, depending on bamboo to sustain their life. Free access to bamboo has been denied to those people who had been conserving and sustaining bamboo growth for thousands of years. Bamboo has been providing them with house, food, utensils, weapons and livelihood by creation of handicrafts. Their knowledge regarding bamboo is holistic that they were able to harvest and sustain its growth simultaneously for so many years. Exploitation of this rich resource by outsiders began since the colonial rule and a look back into the history would throw light into the controversy. British rulers saw bamboo as an important raw material found in abundance in the country.

**Table 1. India's Rank in Global Mining Industry**

Commodity	Contribution in percentage	Rank in order of quantum production
<b>Mineral fuels</b>		
Coal and lignite	7.65	3
Petroleum	0.93	26
<b>Metallic Minerals</b>		
Bauxite	7.04	6
Chromite	17.71	2
Iron Ore	9.92	4
Manganese Ore	7.30	8
<b>Industrial Minerals</b>		
Barites	11.47	2
Kyanite, andalusite, silimanite	5.00	4
Magnesite	1.55	9

Source: Indian Mineral Year Book 2005, IBM, Nagpur (for both Table 1 and 2)

**Table 2. State-wise Lease for Major Minerals**

State	Number of leases	Lease area (hectares)
Andhra Pradesh	1,482	47,905
Chhattisgarh	259	30,353
Goa	396	30,325
Gujarat	1,589	37,457
Haryana	148	16,890
Jharkhand	384	45,185
Karnataka	514	50,902
Madhya Pradesh	1,154	33,465
Maharashtra	220	15,988
Orissa	629	95,532
Rajasthan	1,312	1,34,832

It is a cheap, eco friendly, raw material for paper and construction industry that the need to monopolize its procurement became important. Forest regulation act applies only to trees such that without Government's permission felling of trees in the forest becomes unlawful. Other forest products are not governed by law and can be used freely by the stakeholders, the forest dwellers and tribes. Carol von Linne, a Swedish botanist also known as 'Father of Taxonomy' has classified bamboo under the grass family and not as a tree. In spite of this the colonial rulers declared bamboo as trees just to prevent access to the stakeholders and gain monopoly. In line with this Rulers of Independent India followed the same and declared bamboo as tree (Indian Forest Act 1927). Even modern taxonomy classifies bamboo as giant graminoid or grass belonging to the family Poaceae. The Forest Rights Act, 2006 has changed the status of bamboo to a minor forest produce but still stakeholders found access denied. Recently in March 2011, the Environment Minister has recommended to the Chief Ministers of all States to direct their forest department to declare bamboo as grass or a minor forest produce so that the dependants would get free access. The bamboo economy is so high that the State Governments are not ready to forego their rights and wants to keep it as an inaccessible commodity (Archita Bhatta, 2011).

India, the second largest producer of bamboo has about 9 million hectares of forest area covered with bamboo forests with the major part in the North-eastern states of India like Assam, Meghalaya, Manipur, Mizoram, Nagaland and others like Odisha, Bihar and Maharashtra (Table 3). There are about 136 species of bamboo in India and among this 58 species belonging to 10 genera are found in the North-eastern states. The average yield is 0.33 tonnes per hectare and one tonne of bamboo is sold at Rs. 1000. The annual production is 4.7 million tones with a turnover about 10,000 to 15,000 crore rupees and 15% annual growth rate. The major beneficiaries are paper and pulp industry and the construction sector. On the other side the forest dwellers and tribes have been using bamboo in all aspects of their livelihood starting from infrastructure like shelters, bridges, houses and fences to food, utensils and weapons. For livelihood bamboo is made into baskets, mats, fans, incense sticks, shelves, handicrafts and decorative items to be sold and revenue generated. Consequent to their need these people are able to sustain bamboo production with their traditional conservative methods so that total extinction of species has been prevented. Unlike the State Government, which would cut bamboo indiscriminately thereby creating mass destruction and finally scarcity, the stakeholders with their age old wisdom can manage better in creating a sustainable production. In spite of amendment of

**Table 3. Extent and Decline of Area of CPR land in Dry Regions**

State ( and no. of districts)	No. of study Villages	Area of CPRs 1982-84 (ha)	Decline in the area of CPRs since 1950-52 (%)	Persons per 10 ha of CPR	
				1951 (No.)	1971 (No.)
Andhra Pradesh (3)	10	827	42	48	134
Gujarat (3)	15	587	44	82	238
Karnataka (4)	12	1165	40	46	117
Madhya Pradesh (3)	14	1435	41	14	47
Maharashtra (3)	13	918	31	40	88
Rajasthan (3)	11	1849	55	13	50
Tamil Nadu (2)	7	412	50	101	286

Source: N. S. Jodha (1989), "Depletion of Common Property Resources in India: Micro-Level Evidence", *Population and Development Review*, Vol. 15, Supplement: Rural Development and Population: Institutions and Policy (1989), pp. 261-283.

Forest Act and direct letter to Chief Ministers, the State Governments are not ready to lose their revenue and give a small share to the local communities. Still legal hassles in the form of rules, regulations and permits formulated by State Forest Authorities deter the procurement of bamboo by the locals for their life subsistence needs. In the context of climate change, bamboos are highly effective carbon sequestrator that even one hectare of bamboo could nullify 62 tons of CO<sub>2</sub> per year. This material is biodegradable, eco friendly and makes construction less energy intensive. Thereby its sustainable production would be a green solution to prevent environmental pollution. Only a holistic policy involving the stakeholders with equity would create sustainable bamboo forests down the line.

### Common Property Resources (CPR)

Land area can be divided into three categories in accordance with the ownership viz. state property, individual property and Common Property Resources (CPR). Any area, land or water, collectively owned and managed by a group of community, where there is no individual ownership can be considered as CPR. Community forests, common grazing lands, village ponds, threshing grounds, river beds, burial sites, common wells, ponds, barren uncultivable land, foot path, cart path, drainage canals, either side of railway lines and road sides are to list a few CPRs. These areas have been owned and maintained by the concerned community that derives the benefit of these resources. For generations the collective ownership, protection of property and maintenance has been carried out with equitable sharing of the resources. At present there is lack of free access to CPR due to various reasons. The causes can be attributed to population pressure, land reforms, economic development, state intervention, commercialization of the CPR, privatization of the commons, technological change, poverty, environmental stress, property rights, anti-property programmes and illegal encroachments. Protection of CPR and provision of equitable access would be the best poverty alleviation strategy as this would help the marginalized to raise their income. They can collect fuel wood

and use minor forest produce for their livelihood, In case, availability of water for cultivation and domestic purpose is ensured, then maintenance of tanks, ponds and lakes would follow. Free usage of open area for agricultural activities would ensue better cultivation practices. Proper awareness about the CPR created through education will help people to know their rights and thereby to use and protect it from encroachments. The table below depicts the decline in the area that comes under CPR leading to more number of people depending on small area. Such scarcity of CPR would lead to exploitation, disagreements, unrest, cheating and finally the weaker sections would be the victims pushed towards poverty.

### Conclusion

Developmental projects are indispensable. There is a need to take care of the interests of the oustees, who are marginalized, underprivileged, and oppressed. Priority ought to be given for adequate compensation which ensures their livelihood. This has been a continuous struggle for long for a good cause and an inclusive growth.

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