

# Primary Accumulation, Capitalist Nature and Sustainability

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The relationship between capital and nature gravitates towards a policy of primary accumulation. This article provides an analysis of the imposition of capitalist property rights over natural resources in India as processes of primary accumulation. These processes are evidenced by the construction of large dams and mines, in addition to the proliferation of free market environmentalism. Moreover, the scope for primary accumulation remains substantial in view of the hydel potential and new circuits of accumulation emerge under the auspices of free market environmentalism. Are the desiderata of ecological sustainability and human development realised under the logic of primary accumulation and a neoliberal commitment to economic growth?

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Indian political and economic elites appear to be quite optimistic on various economic, social and environmental questions: there is a satisfactory rate of economic growth; the promulgation of the Forest Rights Act, 2006 aims to remedy historical injustices against adivasis; and the country is a leader in the growing market for certified emissions reductions (CERS) that aspires to address global climate change. In addition, capitalist mechanisms have proliferated with the aim of averting environmental disasters whilst providing profitable investment opportunities. “Free market” environmentalism (i.e., green neoliberalism) as this approach is known, promotes the ideology of a “win-win” solution such that economic growth is compatible with environmental protection. This view is opposed to certain earlier approaches that framed the environmental question as a trade-off between economic growth and environmental conservation (Lele 1991).

Yet there have been dilutions of the provisions in environmental impact assessments (EIA) in the EIA Notification (Ministry of Environment and Forests 2009); the undemocratic character of mining-related memoranda of understanding in central and eastern India has become evident; and the struggles in places such as Kalinganagar and Niyamgiri raise substantial doubts about human development, ecological sustainability, and democratic decision-making. Certain social groups benefit and others bear the brunt of military, paramilitary, and vigilante offensives for their participation in social movements against conservation and development policies. Free market environmentalism is fraught with the contradictions of capitalist development leading to economic growth at the cost of land dispossession, the loss of access

to natural resources, and human relationships with the environment.

In this article, we study the relation between capital and nature, and argue that it gravitates towards a policy of primary accumulation. This is evidenced by the imposition of capitalist property rights in the ownership and use of natural resources (Bakker 2009; Castree 2008; Harvey 2005). Such a policy has economic and political merits from the perspective of the ruling combine; however, it may not engender human development. Therefore, we examine some aspects of the socioeconomic and environmental effects of primary accumulation, and their implications for ecological sustainability and human development.

## Large Dams, Mines, and Free Market Environmentalism

The Central Statistical Organisation (CSO) recently reported that the rate of growth in aggregate output was approximately 7.9% over the period 2008, second quarter – 2009, second quarter.<sup>1</sup> In comparison to the Hindu rate of growth, the new exigencies of capital accumulation necessitate increasing the supply of energy and raw materials. This policy has been pursued with great vigour especially with respect to mining and construction of electricity generation capacity. In October 2009, there were 1,53,694 MW of installed capacity; of this total 24% is generated by hydel stations.<sup>2</sup> Presently, there exist 4,072 large dams generating electricity with 453 under construction. Yet the total estimated hydel potential in India is 1,48,702 MW, of which only 31% has been exploited as of March 2008.<sup>3</sup> In the Himalayan region specifically, 318 hydel projects with a capacity of 93,615 MW are being planned. Of the total estimated potential, 77% of hydel capacity remains to be constructed in the Indian Himalayan region and 36% in the rest of the country (Dharmadhikary 2008).

The mining sector also exhibited substantial growth. Indeed, the average annual growth of mineral production was 7% during the period 1993–2008 according to the index of mineral production. In contrast, the average annual growth of mineral production was 19.4% over the period beginning in 2006 and ending in March.<sup>4</sup>

There were 2,854 mines reported in 2008-09 according to the annual report of the ministry of mines for 2008-09 (excluding atomic minerals, crude petroleum, natural gas, and minor metals). An increase in the rate of extraction is evident. Moreover, the value of exports of ores and minerals during 2007-08 was Rs 95,022 crore (Ministry of Mines 2009). Approximately 14% of the value of exports derives from ores and minerals (Ministry of Mines 2009; UNCTAD 2008).<sup>5</sup> Foreign direct investment (FDI) in the mining sector increased from Rs 196.5 crore to Rs 2,157 crore from 2006-07 to 2007-08 (Ministry of Mines 2009).<sup>6</sup>

Moreover, the ideology of free market environmentalism in part has enabled accumulation in the “green” business market. As an “emerging” economy, it would seem that India does not intend to lag in its extraction from and degradation of nature, nor in its exploitation of nature for profits. Several illustrations of this perspective are contained within a report published by the Global Footprint Network (GFN) and the Confederation of Indian Industry (CII) in 2008. This report opines that the current ecological deficit in India “represents growing market opportunities with significant potential rewards for market leaders”.<sup>7</sup> Furthermore, the report recommends that these market opportunities be exploited by “market leaders” to consolidate their positions in domestic and export markets (GFN and CII 2008). The suggestions of the report are neither fanciful nor wishful. Venture capitalists have invested more than Rs 2,026 crore in so-called green businesses since 2001, 56% of this sum in 2006; this trend parallels developments in the US, where such investments increased from Rs 3,837 crore in 2005 to Rs 11,042 crore in 2006 (Rosen 2007). In 2003, furthermore, the CII persuaded the Andhra Pradesh government to donate land worth Rs 23 crore in order to open the CII-Godrej Green Business Centre (GBC) in Hyderabad. For this project, USAID provided an investment of Rs 70 lakh and the CII invested a sum of Rs 9 crore.<sup>8</sup> The goal of the GBC is to supply an array of green business promotion services, for example, facilitating private participation in the renewable energy sector, with an expected investment potential of Rs 6,10,000 crore. Currently, the capitalist sector provides

more than 95% of total investments in renewable energy in the country. In addition, the report encourages businesses to tap into the Rs 1,50,000 crore green building material market, and the growing biofuels market (GFN and CII 2008).

India’s participation in this free market environmentalism is not restricted to the domestic sphere. The country has a significant presence in the lucrative global market for tradable certified emissions reductions (CERS), which is facilitated by the Clean Development Mechanism (CDM) of the Kyoto Protocol. By March 2009, India gave host country approval to 1,226 projects and 398 of the total 1,455 projects officially registered with the global CDM board are located in India (CDM Authority of India 2009). The Authority estimates that the market value of these projects amounts to Rs 1,51,397 crore, and expects a payoff of Rs 26,811 crore from the sale of CERS to clients in industrialised countries by 2012. Indeed, the trading market has been so lucrative that some entities have reported a larger profit from the carbon market than from their main line of business (Kapoor 2006). It is illustrative to note that despite the high ecological and social costs, hydel projects constitute the highest percentage (27%) of CDM projects; in India hydel projects comprise 10% (133 projects) of total CDM projects that have received host approval and 21% of total CERS generated (UNEP/RISOE 2009).

Nature thus provides a subset of the conditions required for capitalist exploitation of labour power (Burkett 2006). Ecological economists refer to these conditions as the sink and source functions of nature. Capital extracts from nature and expels wastes generated in production and consumption into nature.<sup>9</sup> Such extraction and degradation correlates with primary accumulation and expanded reproduction. The extraction and control of nature is not unique to the capitalist mode of production. Under a capitalist mode of production, on the other hand, a systemic requirement exists for continuous accumulation and expansion, continuous economic growth, and opportunities for profitable investment (Harvey 2003, 2005).

Overextraction and environmental degradation is expected to pose limits to accumulation and expansion, a possibility

that O’Connor (1988) refers to as the “second contradiction of capitalism”. However, in various attempts to transcend this contradiction, a new domain for capital accumulation emerges in the rise of a “green” business sector. For the existence and expansion of this sector, capital must acquire *de jure* or *de facto* property rights over nature. The resulting environmental commodity may be valued for direct consumption or for its services. Thus, the imperatives of accumulation require uninterrupted and increasing access to environmental goods and services, which is evident not only from the liberalisation of the mining and electricity sectors, but the creation of property rights over an environmental “commodity” underlying the rationale of the global carbon trade. Despite the rhetoric of sustainable development, such “green” businesses do not necessarily yield ecological and social desiderata.

### The Environmental Nuclei of Primary Accumulation

How does capital extend its domination over nature? David Harvey (2003) provides a good précis of Marx’s theory of primary accumulation, describing a wide range of processes including expropriation of natural resources. According to Harvey (2003: 145) these processes include:

... commodification and privatisation of land and the forceful expulsion of peasant populations; the conversion of various forms of property rights (common, collective, state, etc) into exclusive private property rights; the suppression of rights to the commons; the commodification of labour power and the suppression of alternative (indigenous) forms of production and consumption; colonial, neo-colonial, and imperial processes of appropriation of assets (including natural resources); the monetisation of exchange and taxation, particularly of land; the slave trade; and usury, the national debt, and ultimately the credit system as a radical means of [primary] accumulation...

These processes of primary accumulation constitute the violent emergence and perpetuation of a regime of capitalist property rights. Harvey claims, furthermore, that the state is a crucial agent of primary accumulation in view of its monopoly over the instruments of violence and the meanings of legality (cf, North 1981: chapter 3). The Indian state has amply demonstrated a disposition towards the application of force

in the pursuit of a policy of primary accumulation. In the Indian context, nature in all its diversity provides ample opportunities for primary accumulation particularly in the cases of large dams (Whitehead 2003), the mining sector, and more recently in terms of free market environmentalism.

The scope for primary accumulation, accordingly, remains substantial with respect to the construction of large dams and mining. These observations are significant in the sense that mining and large dams, notwithstanding the claims of clean energy, are examples of environmentally degrading forms of primary accumulation. Orthodox economic theory approaches such degradation as externalities arising on account of the treatment of nature as an open access resource. According to this school of thought, the solution would be to accord with the diktat of assigning property rights and “getting prices right”. Such a solution to the environmental problem has become politically viable for an assortment of reasons including that the accepted standard of value is posed in the rubrics of market exchange and capitalist property rights. Thus, capital discovers nature as a domain of profitable investment, wherein capital supplies environmental commodities to households and firms, aided by changes in markets, environmental valuation techniques, and new technologies (Burkett 2006; Castree 2008; Harvey 2003; Heynen and Robbins 2005). In other words, free market environmentalism amounts to commodification.

The neoliberal political perspective claims to offer a “win-win” solution for development and sustainability; nevertheless, we doubt the “ecofriendly motivations” of such policy (Castree 2008). Nature is being offered as an outlet for capital accumulation after having been conceived as antagonistic to environmental concerns (Harvey 2005). Perhaps these fixes are undertaken to solve crises, for example, the preservation of sufficient ecological conditions for capitalist production (Burkett 2006) or the problems of overinvestment (Harvey 2005). In any case, the ruling classes attempt to directly control nature via the imposition of capitalist property rights and commodification (e.g., enclosures of the commons), typically utilising violence and force; they may also indirectly

control nature through a neoliberal state (Castree 2008; Harvey 2003).

### Ecological Sustainability

Despite claims to the contrary, however, there are sufficient examples to suggest that primary accumulation and ecological sustainability are not compatible. Consider the Forest Conservation Acts (1980, and its amendment in 1988), which assert that forest conservation is a crucial objective of policy. Despite this, we observe that approximately 12 lakh hectares of forestland were “diverted” during the period 1981-2008. Of these, approximately 11% were acquisitions for “defence” whilst 29.3% were acquisitions for the sum of hydel stations, mining facilities, and irrigation projects, constituting approximately 41% of “diversions” of forestland in total (Ministry of Rural Development 2009).<sup>10</sup> The neo-Malthusian view that assigns culpability for forest degradation to poor rural households is debatable in comparison to the effects of primary accumulation on ecological sustainability. An additional issue is the recommendation of the Apex Advisory Committee of the Ministry of Mines, which was constituted in order to monitor and review the environmental impacts of mining activities. This committee recommended that environmental clearances should not be mandatory for mining leases with an area of less than 50 hectares, an increase from the previous limit of five hectares, and that a public hearing should not be required for those leases less than 500 hectares (Vaghlikar and Moghe 2003). The decision of the Apex Committee does not display much concern for the environment or people’s livelihoods. Perhaps the politico-economic interests governing the behaviour of the Apex Committee and the process of granting forest clearances themselves require scrutiny and rethinking.

Forestland, however, is not only utilised for extractive purposes. The ability of forests to sequester carbon suggests that investments in afforestation and reforestation projects by Annex I countries<sup>11</sup> can be used to offset carbon emissions. Recently, these investments have been termed REDD (reducing emissions from deforestation and environmental degradation) and REDD Plus (combining REDD with payments for environmental services). The World Bank

has been quick to jump on to this bandwagon. In India, the World Bank plans to develop 3,500 hectares of tree plantations in Orissa and Andhra Pradesh via the Bank’s bio-carbon fund. These tree plantations are situated on private agricultural land in the possession of medium, small and marginal farmers and would be in the form a buy-back contract for J K Paper Mills (JKPM).<sup>12</sup> While JKPM is expected to “help arrange short-term credit to farmers for up-front investment costs and provide subsidised planting material, as well as committing to purchase the timber at market prices”, the Bank expects to assist in arranging for long-term credit. Approximately 50% of the land would be planted with eucalyptus trees, which produce good raw material for the paper industry but are environmentally undesirable for their adverse impacts on groundwater, biodiversity, and local vegetation. Unsurprisingly, the project details claim that there will be no negative environmental effects. In addition, the project is expected to sequester at least 0.27 Mt of CO<sub>2</sub> by 2017 although there is no mention of the eventual release of carbon into the atmosphere once the trees are harvested to produce pulp for JKPL. India has hitherto been a marginal player in the market for carbon sequestration, having only 13 afforestation and reforestation CDM projects according to UNEP/RISOE (2009), but we expect that this will soon change.

On the other hand, consider the CERS associated with hydel projects. The adverse environmental impacts of large dams are well documented. Yet, 21% of India’s certified emissions reductions (or about 14 crore of CERS) are associated with hydel projects (UNEP/RISOE 2009). The total market value of CERS in India is predicted to reach Rs 26,753 crore by 2012 provided that all CDM projects are registered with the appropriate authorities (CDM Authority of India 2009). Recall that the total estimated hydel potential is 1,48,702 MW, of which only 31% has been exploited as of March 2008. Thus, the CER mechanism provides additional incentives to reinforce the economic basis for the construction of hydel capacity. Similarly, it is expected that projects undertaken under the REDD and REDD Plus mechanisms would encourage ecologically undesirable monoculture plantations. In point of fact, CERS and REDD open a new

field of primary accumulation, effectively creating capitalist property rights over the natural commons, often in ecologically sensitive areas. Moreover, such market mechanisms provide incentives for potential speculation at the cost of achieving environmental standards (Schneider 2007).

The advent of neoliberal environmentalism, in its present constitution, is unlikely to create a “post-material world” in the sense of reducing material throughput (Guha and Martinez-Alier 1997); this is clear from the negotiations at Copenhagen, and the policy initiatives in India and elsewhere. On the contrary, some analysts argue that utilisation and degradation of nature is likely to be much more intensive under contemporary conditions of globalisation (e.g, a high ratio of international to domestic trade, high capital mobility, and dominance of finance over industrial capital) under the World Trade Organisation regime (Benton 1999). Global capitalism, with its legal loopholes and power differentials across and within nations, not only makes it impossible to account for social and environmental

externalities associated with production and consumption, but also obfuscates the relationship between the product, the producer and the consumer; Princen (1997) calls this the “shading and distancing” of commerce. The diversion of forests, the opening of the mining sector to FDI, and the embrace of the policy of construction of hydel capacity as a mechanism for the accumulation of CERS substantiate our thesis that primary accumulation continues, and has expanded into arenas previously unavailable.

The market solution to the problem of environmental protection consists in the standard of value and appeal to capitalist property rights. This solution to the environmental problem not only subsumes the right to alienate but the right to use nature, its goods, and its services. This method of solution assumes that the price of an environmental commodity fully incorporates its scarcity value and accordingly the rationing mechanism efficiently regulates the use of nature, thus the price mechanism efficiently allocates property rights to uses with the highest return. Notwithstanding

the implications for equity, this conviction partly hinges on a failure to appreciate the distinction between absolute and relative scarcity. The notion of absolute scarcity is particularly relevant from an ecological point of view, but especially if one rejects the idea that human-made goods and services are substitutable for all forms of ecological goods and services (Baumgartner et al 2006). Furthermore, it is unclear whether absolute scarcity is the cause or the result of this “re-institutionalisation” as unvalued nature is increasingly brought under a capitalist logic (Heynen and Robbins 2005). Despite efforts by environmental and ecological economists to perfect valuation techniques, market prices may not reflect the total use value of nature.

**Primary Accumulation and Human Development**

Hegemonic economic doctrines continue to maintain that there is a causal relationship between a satisfactory rate of economic growth and an improvement in the human development of all sections of

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society. Following Marx, Lebowitz (2009) however argues that the logic of capital is opposed to the logic of human development. With respect to the human effects of relationship between capital and nature, in particular, he notes:

Human beings need a healthy environment and need to live with nature as the condition for the maintenance of life. For capital, though, nature – just like human beings – is a means for making profits. Treating the earth and nature rationally (from the perspective of human beings), Marx noted, is inconsistent with “the entire spirit of capitalist production, which is oriented towards the most immediate monetary profit.” Capitalism thus develops while “simultaneously undermining the original sources of all wealth – the soil and the worker”.

Is the logic of primary accumulation consistent with the logic of human development? Let us examine the case of development refugees, an issue that has received much attention as an aspect of primary accumulation. Whitehead (2003) argues, in particular, that the politics of the construction of large dams amounts to a policy of primary accumulation and this is a significant determinant of mass displacement. Thus, “[p]rimitive<sup>13</sup> accumulation is also an integral part of the deepening commodification of environments that hitherto have been part of the general property of humanity or held in common by specific groups” and that it would “concentrate property in a few hands while reducing the access of many to an independent means of livelihood”. The effect of primary accumulation on the size of the mass of development refugees is substantial irrespective of various measurement issues that might affect the precision of the estimates. Fernandes (2004) estimated that approximately six crore people were either displaced or affected on account of development projects in general during the period 1947-2004; 40% were adivasis and 40% consisted of dalits and other marginalised groups. According to an influential estimate, 1.6 to 3.8 crore people were displaced by large dams in India during the period 1950-90, an annual average of approximately between 4 and 9.5 lakh although this estimate does not count persons whose livelihoods were disrupted (Fernandes and Paranjpye 1997 cited in World Commission on Dams 2000).

In a somewhat different context, Lasgoceix and Kothari (2009) estimated that one

lakh persons were displaced in the mid-1980s by the development of various conservation areas. In 2006, there were established 95 national parks, 500 wildlife sanctuaries, and two conservation reserves that legally prohibit use and access whilst in many cases requiring “re-location” (Ministry of Environment and Forests 2006).<sup>14</sup> Given the pursuit of carbon sequestration projects such as REDD and REDD Plus, we expect intensification of this variety of primary accumulation. Will such projects entail the emergence of a new plantation system, wherein the burden of the mitigation of global warming is borne by those social groups dependent upon forests for their livelihood? The beginning of such policy becomes apparent in the afforestation and bio-carbon projects undertaken in Haryana, Himachal Pradesh (*Down to Earth* 2008). Even if we assume for the sake of argument that such environmental policies are sound, we must nevertheless pay attention to matters of political economy in view of their bias to “favour one group’s priorities while displacing those of existing user’s and right-holders” (Springate-Baginski and Blaikie 2007).

**Table 1: Estimated Number of Informal and Formal Sector Workers by Major Economic Activity in 1999-2000 and 2004-05 (millions)**

	1999-2000			2004-05		
	Informal Sector	Formal Sector	Total	Informal Sector	Formal Sector	Total
<i>Agriculture</i>						
Informal workers	231.72	2.99	234.71	251.72	3.21	254.93
Formal workers	0.4	2.57	2.97	0.02	2.82	2.83
Total	232.12	5.55	237.67	251.74	6.03	257.76
<i>Industry</i>						
Informal workers	43.75	12.13	55.88	59.42	16.71	76.14
Formal workers	0.48	8.14	8.61	0.5	8.67	9.15
Total	44.23	20.27	64.49	59.92	25.38	85.29
<i>Services</i>						
Informal workers	64.24	7.93	72.17	80.59	8.99	89.6
Formal workers	0.92	21.14	22.06	0.9	22.16	23.05
Total	65.16	29.07	94.23	81.5	31.16	112.65
<i>Total employment</i>						
Informal workers	339.71	23.04	362.76	391.73	28.91	420.67
Formal workers	1.79	31.85	33.64	1.42	33.65	35.03
Total	341.5	54.89	396.39	393.16	62.57	455.7

Source: NSSO 55th and 61st Round Survey on Employment-Unemployment. Computed; cited in NCEUS 2009.

The creation of development and conservation refugees due to the process of primary accumulation has adverse effects on human development. The model of Cernea, as Whitehead (2003)<sup>15</sup> puts it, suggests that such displacement results in further social and economic exclusion of the project-affected populations: the risks associated with displacement include landlessness, homelessness, economic

marginalisation, food insecurity, increased morbidity, loss of common resources, and disarticulation of social networks. It would be hard to achieve satisfactory “rehabilitation” for these refugees notwithstanding the National Rehabilitation and Resettlement Policy, 2007.

It might be supposed that such expropriation of the means of production would increase the scope of economic activity and the standard of living, even for the expropriated, if there were a capitalist “take-off”. However, the data suggest a decrease in stable employment in the organised or formal sector. Data from the *Economic Survey* suggest that formal employment in the manufacturing sector has declined from roughly 63 lakh in 1991 to 57 lakh in 2004 whereas total employment in the formal sector decreased from about 267 lakh to 264 lakh in the same period. In line with neoliberal economic policies, total employment in the public sector has been steadily declining in the period 1991-2004 without a significant increase in employment opportunities in the private sector. Total formal employment in the private sector increased from approximately 77 lakh in 1991 to

87 lakh in 2001 and then fell to about 83 lakh in 2004 (Ministry of Finance 2007).

Further, in making a distinction between formal and informal workers in the formal and informal sectors, and based on NSSO data from the 55th and 61st Round Survey on Employment-Unemployment, NCEUS (2009) calculates that there was an increase in the incidence of informal workers in both the formal and informal sectors.

The total number of informal workers in the informal sector increased from (approximately) 34 crore in 1999-2000 to 39 crore in 2004-05, and the number of informal workers in the formal sector rose from 2.3 crore in 1999-2000 to 2.9 crore in 2004-05. In the same period, the number of formal workers in the formal sector rose only from 3.2 crore to 3.4 crore. Even in the services sector, which has in recent years contributed to about 60% of the growth in GDP, the increase in formal employment has been much lower than the increase in informal employment in the formal as well as the informal sectors (Table 1, p 43). The NCEUS (2009) forecasts a decrease in the share of formal employment and an increase in the share of informal employment in total employment under various growth scenarios in the future.

This future thus holds the promise of increased labour flexibility, which does not bode well for human development given that informal employment is often characterised by low and arbitrarily fixed wage rates, low levels of job security, gendered wage work and wage discrimination, and low levels of occupational safety; it

was estimated that 85% and 57% of casual workers, in rural and urban areas respectively, receive wages below the legal minimum (NCEUS 2009). Unsurprisingly, while the fraction suffering from extreme poverty has declined since 1993-94 by the reckoning of the "official poverty line" of Rs 12 per day, economic marginality remains the social norm according to various other measures. For example, 77% of India's population continues to be poor and vulnerable in view of their per capita consumption being less than Rs 20 per day (NCEUS 2009). Further, foodgrain consumption per capita declined from 476 grams daily in 1990 to 418 grams daily in 2001, and aggregate calorific intake per capita declined from 2,200 calories daily in 1987 to about 2,150 calories daily in 1999, albeit in a context where the real consumption per capita of the top 20% of urban households has increased (Chandrasekhar and Ghosh 2002; Ghosh 2008).

As Lebowitz (2002, 2009) observes, the logic of capital is contrary to the logic of human development: the logic of capital requires the sacrifice of the "human end-in-itself to an entirely external end". More

specifically, we argue that in the Indian case, that the logic of human development has been subordinated to the logic of the processes of primary accumulation and hence relegated the Indian masses to a rather unsatisfactory situation.

### Concluding Remarks

Habib (1995) observes that the nature of primary accumulation in colonial India transferred wealth originating from non-capitalist sources, proceeding from outside capitalist production, and therefore was a starting point of a new independent circuit of accumulation. Far from being relegated only to the colonial past, however, we continue to observe processes of primary accumulation, which Harvey (2003) refers to as "accumulation by dispossession" (also see Basu and Das 2009; Chatterjee 2008; Sanyal 2007 for relevant discussions). The processes of primary accumulation also exhibit variability over historical time. In many cases these processes include forms of repression, coercion and appropriations, as is evident in conflicts associated with mining and dams. In other cases, different mechanisms extend market control over natural resources via

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Selection of the received papers will be subject to the screening by selection committee. The authors of the selected papers coming from Indian destination will be provided T.A. and free accommodation as per the UGC norms. Due to limited fund the foreign authors of the selected papers will have to make arrangements on their own for their travel expenses, while the lodging will be made available by the college free of cost. The last date of submission of abstract is **15<sup>th</sup> August, 2010**. The last date of submission of completed paper is **30<sup>th</sup> September, 2010**. The date of confirmation to the selected authors is **20<sup>th</sup> October, 2010**. Abstracts and papers can be sent electronically at [srcseminar@gmail.com](mailto:srcseminar@gmail.com). For further details contact Mr. H.N. Tiwari (+919899197454) and Mr. Pankaj Choudhary (+919818681132), Convener Mr. Santosh Kumar (+919911426837). Further details about the topic of the Conference can also be obtained from the college website – [www.sccc.edu](http://www.sccc.edu).

creation of property rights in the flow of returns from, and stock of natural resources. The ideology of free market environmentalism is evident in the imposition of intellectual property rights over biological resources, CERS, and payment for environmental services. These ostensibly protect and enhance human and ecological well-being but real dangers remain.

In its myriad forms, primary accumulation corresponds to the dispossession of the means of production and reproduction, and proletarianisation. The processes of primary accumulation discussed in this paper are of concern given the high dependence of the rural poor on natural resources; by some estimates 46.6% of the "GDP of the poor" is derived from natural resources (TEEB 2009). The importance of natural resources to the marginal sections of the Indian society is not wholly captured by this estimate since it fails to consider that these resources provide security in the event of economic and social shocks. This observation is particularly relevant in the current situation with a loss of at least 50 lakh jobs since October 2008 (Prabhu 2009) and drastic increases in food prices. In this context, there is conflict over the regime of property rights whether in the notion of ownership, control or use of nature. While these policies point towards increasing growth, they do not seem to effectively address issues of social, ecological and economic sustainability (Lele 1991) as would be expected of a comprehensive and rational policy for sustainability and human development.

#### NOTES

- 1 This estimate refers to quarterly GDP at factor cost and constant prices. See the CSO press release at, [http://mospi.nic.in/press\\_note\\_gdp\\_2ndqr\\_3onovo9.pdf](http://mospi.nic.in/press_note_gdp_2ndqr_3onovo9.pdf).
- 2 The data were acquired from the web site of the Ministry of Power, [http://www.powermin.nic.in/JSP\\_SERVLETS/internal.jsp](http://www.powermin.nic.in/JSP_SERVLETS/internal.jsp)
- 3 Data were acquired from the Planning Commission: State-wise Irrigation Potential, Flood Control, Ground Water, Distribution of Large Dams and Hydro Potential Status, <http://planningcommission.gov.in/data/misdch.html>.
- 4 Data acquired from Bureau of Mines, <http://ibm.gov.in/>.
- 5 See the UNCTAD Handbook of Statistics at <http://stats.unctad.org/Handbook/TableViewer/tableview.aspx?ReportId=1902>
- 6 All nominal monetary values, which are given as US\$ in the original source, are converted into Indian rupees at an exchange rate of Rs 46.79 per US\$ (*Hindu Business Line*, 21 December 2009).
- 7 The ecological deficit pertains to the concept of the ecological footprint, which measures the amount of natural resources consumed by a particular country in a given year. A country that

consumes in excess of locally available resources is said to have an ecological deficit. India's per capita ecological footprint was estimated at 0.8 global hectares in 2003, however, available bio-capacity was only 0.4 global hectares per capita. The difference represents either a degradation of available resources or import of resources from around the world (GFN and CII 2008).

- 8 Inside India, Newsletter, USAID, 1 April 2009, [http://www.usaid.gov/our\\_work/economic\\_growth\\_and\\_trade/energy/publications/projects/india\\_greenbizctr.pdf](http://www.usaid.gov/our_work/economic_growth_and_trade/energy/publications/projects/india_greenbizctr.pdf)
- 9 The source and sink functions of nature are often overlapping in view of the multiplicity of the uses of nature.
- 10 According to information given by the Minister of State for Environment and Forests in the Lok Sabha on 25 November 2009, a total of 186 projects are pending for environmental clearance and 204 projects are pending for forestry clearance in the ministry as of 20 November 2009. Of those pending for forestry clearance, 46 projects require an area greater than 40 hectares.
- 11 Annex I countries are industrialised countries in North America, Europe, New Zealand and Australia that are historically responsible for the high level of green house gas (GHG) emissions in the world.
- 12 Information derived from the World Bank Carbon Finance Unit web site, <http://wbcarbonfinance.org/Router.cfm?Page=About&ItemID=24668>
- 13 Note that primary accumulation and primitive accumulation refer to the same concept though we prefer to use the former term to the latter, for various reasons that would lead into a long digression.
- 14 Their estimate excludes forest areas that impose other forms of restricted access.
- 15 Even though Whitehead (2003) uses Cernea's model to describe the effects of displacement on development refugees, one can extend it to the effects on conservation refugees since both entail expropriation of land and other natural resources.

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