

Environment: Globalization and its Alternatives¹

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GLOBALIZATION AND ITS IMPACTS

In 1992, soon after heralding in the new economic policies constituting globalization, the then Finance Minister of India (now its Prime Minister) Manmohan Singh delivered a lecture on environmental aspects of the reforms in Delhi (Singh 1992). His main argument was that environmental protection requires resources, which would be created by the new policies. However, as we shall see below, things have not played out as Singh had argued. Economic globalization in India has had a severe ecological impact, with adverse effects on several hundred million people who depend directly on nature for their subsistence and livelihood. It is important to examine this as a global issue, not only because of the sheer numbers of people involved, or the global importance of India's biodiversity and natural resources, but also because increasingly the Indian economy is playing an international role.

Economic globalization policies introduced in 1991 include: a shift away from an inward-focused model of self-reliance towards a stress on exports and imports, the opening up of various economic sectors to foreign investment, liberalization of regulatory regimes, and a move from public sector investments to privatization. The impacts of these include the following, each of which will be examined in more detail in this essay.

- i. Rapid growth of the economy has required a major expansion of infrastructure and resource extraction, and encouragement to wasteful consumption by the rich. The economy has tended to be predominantly demand-led, with no thought given to how much demand (and for what purpose) is to be considered legitimate and desirable.

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1. This essay is a shorter, modified version of chapters from a forthcoming book by the author and a colleague, Aseem Shrivastava, provisionally titled 'Reclaiming India: Escaping the Globalisation Trap.'

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The result is a significant increase in projects and processes with negative ecological and social costs.

- ii. Liberalization of trade (exports and imports) has had two consequences: rapid increase in exploitation of natural resources to earn foreign exchange, and a massive inflow of consumer goods and waste into India (adding to a rapidly rising domestic production). This has created serious disposal and health problems, and impacted traditional livelihoods in forestry, fisheries, pastoralism, agriculture, health, and handicrafts.
- iii. Environmental standards and regulations have been relaxed, or allowed to be ignored, in the bid to make the investment climate 'friendlier' to both domestic and foreign corporations. Governments are sacrificing more and more natural habitats and prime food-growing land to make way for commercial enterprises. In sync with this, goals of equity are being given up, for instance in the move to relax land ceiling laws to allow industrial expansion.
- iv. The opening up of the economy to foreign investment is bringing in companies with notorious track records on environment (and/or social issues), with demands to further relax environmental and social equity measures. Domestic corporations, partnering with foreign ones or on their own, have also grown considerably in size and power, and now make the same demands.
- v. Privatization of various sectors, while bringing in certain efficiencies, is encouraging the violation or dilution of environmental standards, and the neglect of social services/goods for the poor.

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Had Manmohan Singh's assertion worked, by now we should have seen a spate of measures and programmes to protect India's environment. But the ecological crisis has only intensified. Just as the 'trickle-down' theory does not work for the poor, so too the 'having the resources to invest' assertion does not work for the environment.

Two Caveats

Two clarifications are necessary at the outset. First, criticism of a number of sectors and activities below does not mean I am against them *per se*. I am not saying there should be no mining, no floriculture, no fishing, no exports and imports, and so on. What is crucial is to ask not only whether we need these, but to what extent, for what purpose, and under what conditions. These questions are simply shoved under the carpet in the current model of 'development' under globalization.

Second, many of the trends described below, are not necessarily a product of current globalization. Indeed, many of them have roots in the model of 'development' we have adopted in the last five-odd decades, and/or in the underlying problems of governance, socio-economic inequities, and others. However, the phase of globalization has not only greatly intensified these trends, it has also brought in new elements that considerably enhance the dangers of this model to India's environment and people.

Infrastructure and Materials: Demand is the God

With a single-minded pursuit of a double-digit economic growth rate, demand achieves the status of a god that cannot be questioned. The need for infrastructure or raw materials or commercial energy is determined not by the imperatives of human welfare and equity, but by economic growth rate targets, even where the growth rates may have no necessary co-relation with human welfare.

The last couple of decades have therefore seen a massive increase in new infrastructure creation (highways, ports and airports, urban infrastructure, and power stations). This has meant increasing diversion of land, mostly natural ecosystems like forests and coasts, or farms and pastures.

The example of minerals is strikingly illustrative. Between 1993–94 and 2008–09, mineral production in India has risen by 75 percent. India is now amongst the world's biggest producers of barites, chromite, talc/steatite/pyrophyllite, coal/lignite, bauxite, iron ore, kyanite/sillimanite, manganese ore, and crude steel (Ministry of Mines Annual Report 2008–09). This would be a source of pride, were it not for the inconvenient fact that most of the minerals being demanded are under forested or poor rural areas, rich in biodiversity, where communities are heavily dependent on the area's resources. Of the approximately 113,000 hectares of forest land that has been diverted for mining since 1980 (when it became mandatory for non-forest use of forest land to be cleared by the central government), over 70 percent has been in the period 1997–2007, a clear indication that globalization has dramatically raised the demand for minerals (Data from MoEF, obtained by Kalpavriksh using applications under the Right to Information Act).

The ecological and social impacts have been horrifying. The blasted limestone and marble hills of the Aravalli and Shivalik Ranges, the cratered iron ore or bauxite plateaux of Goa, Madhya Pradesh, and Orissa, the charred coal landscapes of eastern India, and the radioactive uranium belt of Jharkhand, are all witness to the worst that economic 'development' can do. Tens of thousands of hectares of land have been rendered completely barren and unproductive, with only a small percentage restored (mostly a euphemism for

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reclamation by a handful of mostly exotic species of trees, nowhere near the original vegetation) (Vagholikar and Moghe 2003; Bhushan et al 2008; see also <http://www.mmpindia.org/>).

Since 1991, some of the world's largest mining companies are investing in India. These include Rio Tinto Zinc (UK), BHP (Australia), Alcan (Canada), Norsk Hydro (Norway) Meridian (Canada), De Beers (South Africa, Raytheon (USA), and Phelps Dodge (USA). Many of these have as bad or worse environmental and social records as India's own mining companies (<http://www.mmpindia.org/Multinationals.htm>).

The direction of policy change has been towards making life much easier for mining companies, starting with the 1993 National Mineral Policy. In 1996, the government approved guidelines allowing private companies to get prospecting licenses to areas upto 5,000 sq km, as against the then limit of 25 sq km. In 2001, Foreign Direct Investment (FDI) upto 100 percent in mining became possible. In the period 2000 to 2009, permits for mineral reconnaissance went up from 53,000 sq.km to 466,556 sq km. In 2006, a high-level committee set up by the Planning Commission recommended a 'seamless' transition from reconnaissance permits to prospecting licenses and onto mining licences. Then in 2008, a new National Mineral Policy was brought in with the objective to make the regulatory environment 'more conducive to investment and technology flow.' The new policy encourages the move towards greater mechanization, privatization, and foreign investment, suggests that environmental regulations become voluntary, and assures companies the seamless transfer mentioned above (Ministry of Mines and Minerals, Annual Reports, 1999–2000 to 2008–09; Planning Commission 2006; Saha-Sinha 2009; Ministry of Mines 2010; Vagholikar and Moghe 2003).

The lack of regulation in the mining sector, an inevitable consequence of a demand-driven economy that is trying to meet the greed of India and the world, is clearly indicated in the spate of exposes regarding illegal mining. In Karnataka alone, 11,896 cases of illegal mining were detected between 2006 and 2009; in Andhra, 35,411 cases. The central government has had to ask the Central Bureau of Investigation (CBI) to go into the matter. Some States, shamed into action, have halted operations in many illegal mines, and arrested concerned officials. (Ministry of Mines and Minerals, Annual Reports 2005–06 and 2007–08; <http://www.thehindu.com/2009/12/10/stories/2009121058660800.htm>)

Exports: Selling our Future

Globalizing India's economy has meant opening up natural resources to both domestic and foreign demand, justified by the positive effect this will have on

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domestic economic growth. In line with this, exports grew at an annual rate of over 25 percent from 2003–04 to 2007–08, jumping to US\$163 billion, representing 1.4 percent of global trade (Singh undated; http://commerce.nic.in/publications/annualreport_chapter4-2008-09.asp, accessed 30 November 2009; http://pib.nic.in/archieve/eximpol/eximpolicy2002/eximpolicy2002_rel.html, accessed 20 February 2010).

Whether an economic development model that depends heavily on exports is itself desirable, is a question for a separate essay. For the moment, assuming that some level of exports is desirable or necessary, a responsible policy would have at least the following key principles:

- Access of the country's citizens to the products being considered for export is not jeopardized by reduced physical availability or increased costs;
- Extraction or manufacture of these products is ecologically sustainable;
- Rights of local communities from whose areas the resources are being extracted are respected; and
- These communities are the primary beneficiaries.

Unfortunately, exports under globalization have violated each of these principles, not surprising when targets are set in terms of monetary figures of growth rather than the quality or the impacts of such growth. The rapid increase in mining (a significant portion of which is for export) has already been discussed above. Another instance is marine fisheries.

Exports of marine products have risen from 139,419 tonnes in 1990–91, to 602,835 tonnes in 2008–09. While the rise was extremely steep in the pre-1991 period also (from a small volume of 15,732 tonnes in 1961–62), the globalization phase is significant in many ways. A growing demand from countries to which India previously did not export, and the introduction of new technologies, has fueled a steady growth in extraction and export. From a handful of products being sent to about a dozen countries, we now export about 475 items to 90 countries (www.mpeda.com/inner_home.asp?pg=publications/exportreview/trends.htm).²

But at what cost? India is now the second largest aquaculture producer (in quantity and value) in the world, at the cost of serious ecological damage, and disruption of the livelihoods of traditional fisherfolk and farmers. One study showed that in the States of Andhra Pradesh and Tamil Nadu, *the social and environmental costs of shrimp aquaculture were 3.5 times the earnings (annual*

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2. All pages in the MPEDA site open with the same URL; readers would need to search for the relevant data by accessing the links on the home page.

losses: Rs. 67,280 million; annual earnings: Rs. 17,780 million) (NEERI 1995a & 1995b; Kurien 1999). As more and more areas get converted to shrimp farming, local fish that are the staple food of local communities, like mullets (Mugilidae) and pearl spot (*Etroplus suratensis*), are eliminated (Bhatta 2002).

As marine capture fisheries have also grown to about 3 million tonnes in 2008, there is evidence of over-fishing in the territorial waters (though not in the deeper seas), and overharvesting of several species (James and Kitto 2008). This, according to the Report of the Working Group on Fisheries for the 10th Five Year Plan, is mainly due to the use of the seas as 'open access' with no tenurial rights given to traditional fishing communities (Mathew 2003). Technologies have also changed, with bottom trawling becoming very common, and the traditional diversity of gear as also the traditional knowledge that maintained sustainability, rapidly eroding.

The government claims that big operators under the new policies will be allowed to fish only in deep waters, where traditional fisherfolk do not go. But past experience has shown that trawler owners find it convenient and cheaper to fish closer to shore (Kurien 1995). Also, trawlers continue to be illegally used in the fish-breeding season. Physical clashes between trawler owners and local fisherfolk remain common.

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Import Liberalization: India as Dumping Ground

Accompanying the liberalization of exports has been the opening up of the Indian economy to an increasing amount and variety of imports. Policies or programmes that gave priority to domestic agriculture and production, and to environmental and consumer safety, have given way to a virtual free-for-all.

The last decade or so has also seen India emerging as a major importer of hazardous and toxic wastes from the industrial countries, like many other tropical countries in the past. We now import over 100 broad kinds of wastes, of which a few dozens are hazardous. Import of metal wastes is now in several millions of tonnes annually. Import of waste parings and PVC scrap shot up from about 33 tonnes in 1996–97 to 12,224 tonnes in 2008–09. Plastic wastes as a whole more than quadrupled from 101,312 tonnes in 2003–04 to 465,921 tonnes in 2008–09 (Department of Commercial Intelligence and Statistics, Ministry of Commerce and Industry, data supplied on Right to Information application by Kalpavriksh, February 2010). Corporate giants are often the culprits: Pepsico has been exposed sending PET bottles (very difficult to recycle) to India; Hindustan Lever Ltd (subsidiary of Unilever) has been implicated in a case of dumping wastes containing mercury, behind a settlement in Tamil Nadu. Protests by the community led the Tamil Nadu Pollution Control

Board to take action, including ordering the scrap (416 tonnes) to be sent back (http://www.thesouthasian.org/archives/2004/mercury_in_our_backyard.html, 10 December, 2004; http://www.thesouthasian.org/archives/2005/waste_dumping_grounds_of_the_w.html, 28 June 2005).

A growing proportion of the imported waste is from the computer and electronics industry. According to an investigation by Toxics Link, an NGO working on waste issues, about 70 percent of e-wastes found in recycling units of Delhi were those dumped by industrial countries into India. Toxics Link found that the company Artero had received permission to import 8000 tonnes of e-waste in 2009 (MoEF Office Memorandum, No.23-9/2009-HSMD, 2 July 2009).

Consumerism and Waste

India's current wave of ostentatious consumerism has its roots in a thirst for foreign consumer products amongst a tiny elite minority, which before the 1980s, was possible to satiate only by purchasing them abroad and paying substantial customs duties to bring them home (or smuggling them in). In the 1980s, the then Prime Minister Rajiv Gandhi began opening up the import sector. However, the biggest thrust to consumerism has come after the economic 'reforms' began in right earnest in the 1990s, which has also fuelled a huge domestic luxury product sector.

The rapid rise in production of luxury goods has major ecological consequences from resource extraction (mining, tree-felling etc.) to production (pollution, working hazards etc.). The links between such consumerism and the environment are not well-studied, but there are some indications. Based on surveys by the CSO and NCAER over the 1980s and 1990s, The Energy Research Institute (TERI) has documented the rapid rise in the use of non-renewable materials (like minerals), manufactured consumer goods (including those with direct environmental impact like refrigerators and air-conditioners using CFCs), transport vehicles, and so on. This is not just a result of rising populations, but perhaps more due to changing lifestyles. For instance, consumer preferences are changing from non-packaged goods to packaged ones — TERI estimates that consumption of packaged paper will rise from 2.7 kg per person per year in 1997 to 13.5 kg per person per year by 2047. This would mean a total paper use of 23.1 million tonnes for packaging alone, and the consequent rise in solid wastes. Hazardous waste generation is now mind-boggling, at about 4.4 million tonnes in 2006. Electronic waste, a phenomenon purely of the last couple of decades, was estimated at 146,180 tonnes in 2005, and likely to go up to 800,000 tonnes by 2012 (Pachauri and Sridharan 1998; MoEF 2009).

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Plastics have penetrated the life of Indians in ways no-one would have predicted even two decades back. Since 1991, production capacity of various forms of plastics in the country has shot up from less than 1 million tonnes, to well over 5 million. Average consumption of virgin plastics per capita reached 3.2 kg in 2000/01 (5 kg, if recycled material is included), from only 0.8 kg in 1990–91. By 2000–01, India was producing 5400 tonnes of plastics waste *per day*, about 2 million tonnes per annum (more recent figures not available) (Kandhari 2009; MoEF 2009; http://en.wikipedia.org/wiki/Plastics_materials_in_India, accessed 27 February 2010).

Consumption Inequities

In 2007, Greenpeace India produced a report on climate change issues in India, showing that a tiny percentage of India's population was responsible for an inordinate amount of carbon emissions, but this was hidden by the fact that a huge number of low-emission Indians reduced the per capita figures. It found that the richest (those with income above Rs. 30,000 a month) emit 4.5 times (per person) more than the poorest (income below Rs. 3,000 a month, well over half of India's population). All 150 million Indians who earn above Rs. 8,000 per month are already above the global limit of 2.5 tonnes per capita that scientists consider is necessary if we want to restrict the temperature rise to below 2°C (Greenpeace India 2007; Bidwai 2009).

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What explains this gross difference in emissions? Greenpeace found that the biggest difference was in the extent of household appliances using electricity. While general lighting, fans, and TVs are common to all classes (though much more in use by the rich), several appliances were found only or predominantly in rich households... air conditioners, electric geysers, washing machines, electric or electronic kitchen appliances, DVD players, computers, and the like. Secondly, much greater use of transportation using fossil fuels, including gas-guzzling cars and airplanes, characterized the consumption of the rich.

Carbon emissions are only one indicator of consumption inequities. If one adds all the products and services that the richest classes consume, and the wastes they throw out, it is very likely that their overall ecological impact is even more skewed vis-a-vis the poorest classes.

Internal Liberalization: Towards a Free-for-all?

All industrial countries of the world have gone through a process of tightening environmental standards and controls over industrial and development projects, for the simple reason that project authorities and corporate houses

on their own have not shown environmental and social responsibility. In India, there is a reverse process going on.

In 1994, a notification was brought in, under the Environment Protection Act 1986, making it compulsory for Environmental Impact Assessments (EIAs) to be conducted for specified projects. While this notification was weak, and subject to various kinds of implementational failures, it nevertheless injected some degree of environmental sensitivity in development planning. However, it continued to be seen as a nuisance by industrialists, politicians, and many development economists. A committee set up by the Indian government pointed to the need to reduce the environmental hurdle, and a World Bank-funded process to assess environmental governance, also suggested 'reforms' (read: 'weakening') of this and other regulatory measures. Thus, in 2006, despite considerable civil society opposition, the government changed the notification, making it much easier for industries and development projects to obtain permission, and weakening the provisions for compulsory public hearings. The notification also took tourism off the list of projects needing environmental clearance, despite evidence that in many places this was a sector out of control (Kohli and Menon 2005; Saldanha et al. 2007; Menon and Kohli 2008: 14–17).

The net result of these changes (and others outlined in this chapter) has been a sharp increase in the number of projects that are seeking and getting environmental clearance, making it impossible for the Union Ministry of Environment and Forests (MoEF) to properly scrutinize their implications, or monitor their impacts. As of early 2009, MoEF had over 6000 projects to monitor, with about 20 personnel; projects granted environmental clearance are monitored only once in 3 to 4 years (Kohli and Menon 2009).

The impact of globalization on environmental regulations is nowhere clearer than when examining how the Forest Conservation Act 1980 (under which all proposals for non-forest use of forest land have to get central government permission), has become a *Forest Clearance Act*. Out of the total forest land diversion that has taken place since 1980–81, about 55 percent has been after 2001; as already mentioned, about 70 percent of the forest land diverted for mining since 1980–81, came between 1997 and 2007 (Data supplied by MoEF in response to Right to Information applications filed by Kalpavriksh in 2008).

Even areas designated for the specific protection of wildlife and biodiversity have not been spared. The last couple of decades have seen a spate of proposed and actual diversions of land within national parks and sanctuaries, including outright denotifications (or degazetting). Very soon after the reforms process started, for instance, several hundred sq.km of Darlaghar Sanctuary (Himachal Pradesh), Narayan Sarovar Sanctuary (Gujarat) and Great Himalayan National

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Hundreds of cases of violations of the law, e.g., of the CRZ notification by tourist resorts on the coast, have been reported in the last few years. Tiger reserves and other protected areas like Kanha, Bandhavgarh, Corbett, Periyar, Ranthambhor, Bandipur and Nagarhole are ringed by resorts that put enormous pressure on the staff and facilities of the reserves, repeatedly violate both the letter and spirit of regulations meant to minimize tourism impact, and contribute virtually nothing to the upkeep of the reserves.

Park (Himachal) were dereserved to make way for mining, industries, and dams. This has continued with several dozen other protected areas being affected.

In 1991, the Coastal Regulation Zone (CRZ) notification was promulgated under the Environment Protection Act 1986, as a means to regulate activities that could be detrimental to ecological and livelihood interests in the coastal areas. Though by no means perfect, and despite indifferent implementation by most States, the notification helped protect many coastal areas and the fishing communities living in them. But, for the same reason, it became a thorn in the flesh of industrial and commercial interests, and their pressure on the government resulted in about 20 relaxations to the original notification. Then in 2005–06, the government initiated a move to change the notification altogether, proposing a system in which State governments can determine what should and should not be allowed in various zones along the coast. Civil society organizations and fisher communities (through networks like the National Fishworkers' Forum) have severely criticized the proposal for being a sell-out to commercial and industrial interests. Responding to this, MoEF has allowed the CMZ draft notification to lapse, and at the time of this writing, promised widespread consultations before coming up with a new notification. (Menon et al 2007; Kasturi 2008; <http://www.coastalcampaign.page.tl/Home.htm>).

Tourism has received a major boost in the globalization era. From about 140 million domestic tourists in 1996, the figure almost quadrupled to 527 million in 2007; in the same period, foreign visitors increased from 2.29 million to 5.08 million. Several parts of India previously restricted to visitation have been opened up for tourism in the last few years. This includes ecologically, culturally and strategically sensitive areas like Ladakh, Andaman and Nicobar Islands, Lakshadweep, and many parts of north-eastern India. Other areas, already open before globalization, are groaning under mass, unregulated tourism activity. Hundreds of cases of violations of the law, e.g., of the CRZ notification by tourist resorts on the coast, have been reported in the last few years (over 1,500 cases from Kovalam beach area in Kerala alone). Tiger reserves and other protected areas like Kanha, Bandhavgarh, Corbett, Periyar, Ranthambhor, Bandipur and Nagarhole are ringed by resorts that put enormous pressure on the staff and facilities of the reserves, repeatedly violate both the letter and spirit of regulations meant to minimize tourism impact, and contribute virtually nothing to the upkeep of the reserves (MoT 2009; EQUATIONS 2008; 2009)

Though well aware of the situation, there is little action by the government to regulate tourism. On the contrary, it is actively considering the declaration of Special Tourism Zones (STZ). These zones would have several facilities, e.g., single-window clearance and 100 percent tax exemption for

10 years, and would be quite large as they should be able to provide 2000 to 3000 hotel rooms (EQUATIONS 2007).

There have been some welcome moves towards stronger environmental oversight, by the Minister of State for Environment and Forests who came in with the new Indian Government in 2009. But a new institution in the form of a National Environment Tribunal, aimed at providing faster legal recourse to litigants, and a proposed National Environment Protection Authority, aimed at creating an independent regulatory body, are very inadequate attempts, given that the overall context of fundamentally flawed legislation and approach to the treatment of environmental sustainability of 'development' projects and processes is not being changed (Lele et al 2010; Merton and Kohli 2009; TAI-India 2010).

Along with the attack on environmental governance has come an increasing propensity to dilute or sidestep the social guarantees given to some of the most vulnerable sections of Indian society. The Land Acquisition Act 1894, one of colonial era's most pernicious laws that allows the government to take over virtually any land it wants for an arbitrarily defined 'public purpose,' has been strengthened in a recent amendment (1984), and a new Bill (2007) has been proposed to enable faster or easier take-over of land by state and private entities (Parker and Vanka 2008; Asher 2009).

Massive chunks of land in the heart of tribal India, home to some of country's most sensitive communities and some of its best forests, have been (or proposed to be) leased to industrial houses for mining, steel plants, and other industries. Finding however that both Adivasi resistance and the hold of the so-called 'Naxal' or 'Maoist' groups³ is not allowing any of these plans to materialize, the State government in Chhattisgarh in the name of fighting 'Naxalism,' has armed some Adivasis to turn against their own community. Termed 'Salwa Judum' ('peaceful hunt'), this has created a civil war like situation, in which hundreds of villages have been forcibly evicted or forced to flee. A high-level committee set up by the Union Ministry of Rural Development (http://www.rd.ap.gov.in/IKPLand/MRD_Committee_Report_V_01_Mar_09.pdf), in its draft report had indicted corporate houses like Essar and Tata, in what it called 'the biggest grab of tribal lands after Columbus;' but both this phrase and references to specific corporate houses were removed from its final report (<http://www.dolr.nic.in/>). Meanwhile, a report on 'national security and terrorism' by the Federation of Indian Chambers of Commerce and Industry (FICCI),

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3. 'Naxalism' or 'Maoism' are loose labels to a range of strongly leftist groups in parts of eastern and central-southern India (especially in areas of tribal concentration), that have been waging armed struggles for land rights and other issues for many years. The Government of India terms them the country's biggest internal security threat, a perspective not shared by several independent observers.

released in November 2009, is a thinly veiled argument to open up central India for exploitation by corporations (FICCI 2009). It argues that,

...the growing Maoist insurgency over large swathes of mineral-rich countryside could soon hurt some industrial investment plans... just when India needs to ramp up its industrial machine to lock in growth and just when foreign companies are joining the party, the Naxalites are clashing with the mining and steel companies essential for India's long-term success... The other reason for sounding the alarm stems from the increasingly close proximity between the corporate world and the forest domain of the Naxalites... India's affluent urban consumers have started buying autos, appliances, and homes, and they're demanding improvements in the country's roads, bridges and railroads. To stoke Indian manufacturing and satisfy consumers, the country needs cement, steel, and electric power in record amounts... There is a need for a suitable social and economic environment to meet this national challenge. Yet there's a collision with the Naxalites... Chhattisgarh, a hotbed of Naxalite activity, has 23 percent of India's iron ore deposits and abundant coal. It has signed memoranda of understanding and other agreements worth billions with Tata Steel and Arcelor Mittal (MT), De Beers Consolidated Mines, BHP Billiton (BHP), and Rio Tinto (RTP). Other States also have similar deals. And U.S. companies such as Caterpillar (CAT) want to sell equipment to the mining companies now digging in eastern India.

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Headlong into Unsustainability?

Given the way India has treated its environment in the last few decades, environmentalists and social activists have been warning that we are on an unsustainable path of 'development.' This conclusion, born out of observation and experience, was confirmed in a report produced by the Global Footprint Network (GFN) and the Confederation of Indian Industries (CII) (GFN 2008). Released in 2008, this document said that:

- India has the world's 3rd largest ecological footprint, after the USA and China;
- Indians are using almost two times what the natural resources within the country can sustain (or twice its 'biocapacity');
- The capacity of nature to sustain Indians has declined sharply by almost half, in the last four decades or so.

TERI, in a study in the late 1990s, concluded that environmental costs in India exceed 10 percent of the GDP as a result of loss in agricultural productivity, loss in timber value due to degradation of forests, health costs due to polluted water and air and costs due to depleted water resources. Further, the economic loss due to soil degradation resulted in an annual loss of 11–26 percent of the agricultural output (Pachauri and Shridharan 1998).

A report on energy scenarios for India has a somewhat positive analysis: 'The Indian economy exhibits some robust features of low carbon growth that makes

BOX 1: The Climate Change: Impact and Response

The period since the 1980s, when economic globalization began to be imposed on countries of the South, has seen the greatest rise in climate change emissions. Carbon dioxide emissions have nearly doubled since 1985, as a result of substantial jumps in global trade (requiring transportation of goods and people), the rise of some key Southern economies (South-east Asia, China, India) riding on the backbone of fossil fuel energy, growth and trade-related natural resource destruction (especially, deforestation).

There are several scenarios of the impacts India will face. A rise of one metre in sea levels, which could occur by the early 22nd century, could inundate about 5764 sq km, displacing over 7 million people. Changes in rainfall patterns, with overall amount increasing, but a decrease in both amount and number of rainy days in many areas, will cause worse droughts and floods than so far experienced. This and increased temperatures could, according to most assessments, reduce foodgrains production (by up to 20 percent for some crops), though some say it may increase. The receding and faster melting of the Himalayan glaciers (the rate of which is a topic of serious scientific disputes, but very few challenge the fact that this is happening) will threaten river-based livelihoods across northern India. Changes in marine water temperatures will affect the productivity of the seas, cause rich coral systems to start dying, and change fish movement patterns in ways that fisherfolk will find difficult to cope with.

While India's global position has justifiably been one of

demanding accountability and action from the Northern countries, its domestic policy remains weak and vascillating. In 2009, a National Action Plan on Climate Change (NAPCC) was released. There are some good elements, such as a significant focus on solar power and energy efficiency through dedicated missions. But even these have conceptual and implementation problems (e.g., a focus only on solar and none on other renewables, little emphasis on decentralized energy generation, and several missing sectors in energy efficiency). Many of the other elements (e.g., missions on sustainable agriculture, and water) remain stuck in tired, outmoded strategies with little bold, out-of-the-box thinking. The water mission includes a continuing dependence on big dams, completely ignoring their immense ecological and social costs. In agriculture, a major chance to shift away from chemical fertilizers (responsible for about 6 percent of climate emissions in India) to organic inputs has so far been missed (the Mission is still under development). There is little or no mention of inequities in how much 'climate space' is occupied by different sections of India's population, and the obscene consumerism of the ultra-rich. The NAPCC has been drafted, and continues to be worked on through its individual missions, with minimal public input and transparency. Overall, it does very little to challenge the fundamental flaws of the 'development' and growth model that brought about the climate change crisis in the first place.

Sources: GOI 2009a, MoEF 2009; Bidwai 2009; Thakkar 2009a; Greenpeace India 2009

its overall energy and CO₂ intensity lower than that of China and comparable to that of the U.S.' Nevertheless, the Report concludes that: 'Notwithstanding these signs of optimism, India is by no means on an optimal path towards sustainable development.' This is because growth has been very uneven, leaving behind a huge section of the population; and because carbon intensity of the energy sector, relying as it does on inefficient coal technologies and distribution systems, is still one of the highest in the world (Rao et al 2009: 40–41).

Multiple Crises: Food, Water, Livelihoods

A very large section of India's population is going through severe and multiple crises: food insecurity, water shortages, inadequate fuel availability, and dislocation of livelihoods with limited alternative options. These have all existed prior to the current phase of globalization, and even prior to modern forms of 'development.' But they are precisely what 'development' and

globalization were meant to have alleviated; on the contrary, they have been exacerbated, or stayed as severe, for many people and regions.

Take food insecurity. The percentage of the population going hungry has declined from 24 at the start of the 1990s to 22 in 2004–06, a marginal decrease. More tellingly, India has the world's largest number of undernourished people: the Food and Agriculture Organization (FAO) estimate for the period 2004–06 is 251 million, a little less than a fourth of the country's population. There is plenty of food available, with foodgrain stocks of the Food Corporation of India (FCI) remaining consistently high, and yet a fourth of Indians go to bed hungry. These are the people who simply can't afford to buy the grains, and who are not being reached by the government's welfare schemes; a situation made much worse by the alarming inflation in food prices India has seen at the end of the first decade of the third millennium. As millions of people get pushed out of ecosystem and small-agriculture based subsistence livelihoods, into the market economy, food can only be obtained with cash, which is a scarce resource for them. Crucial sources of nutrition such as traditional cereals (e.g., millets) and pulses, or wild and semi-wild foods from forests and wetlands, have declined both in availability and affordability (e.g., a 26 percent decline in per capita availability of pulses since the early 1990s) (FAO 2009; MoEF 2009; GoI 2009b; TPCG and Kalpavriksh 2005; MoEF 2009).

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Water insecurity is as serious. For several million people in both rural and urban areas, access to adequate potable water even for drinking is a struggle. Proximate causes include mismanagement of surface wetlands and subsurface aquifers, degradation of catchment areas that trap rainwater, repeated droughts, excessive concentration of population (in cities), pollution of surface and groundwater sources. At the root of these lie policy failures (relating to wetland and groundwater conservation and management, pollution, and pricing of water), and appropriation by powerful corporations and elites (for instance, Coca Cola's bottling plants in many parts of India have deprived local communities of safe groundwater, see <http://www.indiaresource.org/issues/water/index.html>, accessed 27 February 2010; <http://www.teriin.org/cocacola.php>).

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Of particular concern is groundwater. Its exploitation for agricultural, industrial and urban purposes, has in many parts of India reached levels where aquifers are dropping alarmingly. Over half the groundwater blocks in rural India are not recharging as fast as withdrawal. In a reply to a question in Parliament, the government has stated that in one-third of the country's districts, groundwater is not fit for drinking, due to high levels of iron, fluoride, arsenic and salinity (MoEF 2009; Bidwai 2009; ToI 2010).

Total use of water in India (at about 750 billion cubic metres) is still well within the water available (about 1869 bcm), but it is projected to level off soon after 2025 and then overshoot by 2050. This, of course, is if we only

consider human use; if we need to account for all other functions of water for natural ecosystems and for other species, we realize we are already in a crisis situation (MoEF 2009).

And finally, there is the crisis of livelihoods, or employment. As ecosystem disruption and land/water degradation intensifies, or as access to natural resources and traditional consumers declines, communities who have been traditionally self-employed (as farmers, hunter-gatherers, fishers, pastoralists, craftspeople etc.), are increasingly impacted. There is no comprehensive estimate of the loss of livelihoods and employment that has taken place so far, itself an indication of how neglected this issue is (TPCG and Kalpavriksh 2005).

Particularly badly hit are nomadic groups, their migratory routes disrupted, their lifestyles and cultures marginalized, misunderstood or denigrated, and their own younger generations turning away under myriad influences. The Anthropological Survey of India estimated that there were at least 276 non-pastoral nomadic occupations (hunter-gatherers and trappers, fishers, craftspeople, entertainers and story-tellers, healers, spiritual and religious performers or practitioners, traders, and so on). Most of these are threatened, some already extinct or dying, and the people displaced from these livelihoods are either getting absorbed into insecure, undignified, low-paid, and exploitative sector of unorganized labour, or left simply unemployed. The same holds for many of the 40-million pastoral nomads of the country (Misra and Prabhakar 2002; Vivekanandan undated; Sharma et al undated).

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Has Environment been Mainstreamed into National Planning?

As mentioned at the beginning of this chapter, at the start of the globalization reforms in 1991, the then Finance Minister Manmohan Singh had stated that India needed to increase its rate of economic growth to raise the resources needed to protect the environment. Quite apart from the fundamental issue of whether one can bring back what has already been destroyed (e.g., the several hundred thousand hectares of natural forest that have been submerged under dams or mined out or chopped for industry), one can ask: has funding for environmental protection substantially increased in proportion to the problems that globalized 'development' has caused? And has environment become a central part of the planning process?

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4. Figures not adjusted to a baseline; it is therefore more relevant to look at the trend of the share of the budget that MoEF is allocated, over this period.

MoEF's allocation has never, ever, gone even near the mark of 1 percent of the total budget. Indeed, it has steadily declined as a share of the total budget, since 2004–05, reaching an all-time low of 0.36 percent in 2009–10. While the total budget has risen over 5 times in this period (1995–96 to 2009–10), the MoEF budget has risen only 4 times. It is therefore clear that even where the government has more overall money, it is not putting a proportionally higher amount into environment.

What about other sectors of the budget that may be related? One clear indication could be the funding for non-conventional energy sources. These were given about 0.8 percent of the total energy budget in 1992–93, and have crept up to a still-mere 1.28 percent in 2008–09. Most of the rest of the budget went into thermal power, acknowledged to be highly polluting and the biggest source of climate change gases; a substantial portion also went into hydro-power, much of it into ecologically and socially destructive big dams (GoI 2009).

Another way to assess the centrality given to ecological issues in the macro-planning process is to examine the annual *Economic Survey* produced by the Government of India, reviewing major trends in the economy and providing an outlook for the coming year. Since the early 1990s, the Survey has included a section on environment, previously absent. However, the section has remained an insignificant aside, getting one or two pages out of around 200. And while this has often painted a dismal situation regarding forests, land and water, and pollution, this has never been linked to the years's major economic developments. They do not, for instance, analyse whether the impact of these developments was ecologically detrimental or corrective, nor the implications of environmental degradation for future economic development.

Despite repeated pronouncements of the goal of 'sustainable development,' there are no criteria and indicators in use to assess whether we are heading towards such a goal.

For perhaps the first time, the 2008–09 Survey mentions that 'consumption issues' have to be looked into, in relation to climate change and the need for 'ecological sustainability of India's development path.' This could be one wedge for the much fuller entry of environment into economic assessments in future, but for the moment, those who are in charge of India's economy, do not appear to be particularly interested.

Has Globalization not Benefited the Environment at All?

There are undoubtedly a number of environmental benefits that globalization brings. Several technologies relating to renewable energy, pollution control, efficiency, and so on, have been part of the overall inflow that globalization enables. The electronics and communications boom too has facilitated much

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faster and greater exchange of information and ideas, including the possibility of campaign alerts that people around the globe can respond to virtually immediately. It can also be argued that many multinational corporations, and India's own megacorporations, have greater resources to research into and develop ecologically superior technologies for many processes.

Yet, there is no indication that these benefits of globalization are anywhere commensurate with the losses it entails, as outlined in this chapter. Whatever indications are available, quantitative or qualitative, point to growing ecological unsustainability of the country as a whole, and increasing environmental insecurity for hundreds of millions of its citizens. At least partly this is because the forces that economic globalization has unleashed are not going to be quelled simply by deploying environmentally appropriate technologies or spreading rapid-fire information. At best, these will delay the ecological collapse and social disruption that economic globalization is leading us towards, helping us to gain time, and providing some steps in the transition to, a radically different society. But what could such a society look like; what is the alternative to economic globalization?

TOWARDS ALTERNATIVES: RADICAL ECOLOGICAL DEMOCRACY

Radical Ecological Democracy: An Introduction

If the real aim of human society is happiness, freedom, and prosperity, there are indeed many alternative ways to achieve this without endangering the earth and ourselves, and without leaving behind half or more of humanity. This applies to India as to any other country, though the specifics of the alternatives will vary greatly depending on ecological, cultural, economic, and political conditions. This essay presents, all too briefly, an outline of some key ingredients of a more sustainable, equitable, and just India, and glimpses of initiatives that are already achieving one or more elements of such a framework.

One can call this framework Radical Ecological Democracy (RED): a social, political and economic arrangement in which all citizens have the right and full opportunity to participate in decision-making, based on the twin principles of ecological sustainability and human equity.⁵

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5. For elaborate expositions of more participatory forms of democracy, see: the concept of 'radical democracy' in Markovic (1994: 131–45); 'inclusive democracy' by Fotopoulos, http://en.wikipedia.org/wiki/Takis_Fotopoulos#Inclusive_Democracy; 'associative democracy' in Hirst (1994). For glimpses into ancient Indian democratic or republic-like practices, see Muhlberger (1998); on clan assemblies, village assemblies, and gana-sanghas, see Thapar (2002). The environmental angle to radical democracy has been brought out by many, including Morrison (1995) and Mitchell (2006). An earlier and shorter exposition of RED occurs in Kothari (2009).

- *Ecological sustainability*, is the continuing *integrity of the ecosystems and ecological functions* on which all life depends (including all hydrological, chemical, and physical processes that give us the air, water, and soil we cannot live without). This encompasses the continuation of *biological diversity* as the fulcrum of life, ensuring the security of species from human-caused extinction.
- *Human equity*, is a mix of equality of opportunity, full access to decision-making forums for all (which would include the principles of decentralization and participation), equity in the distribution and enjoyment of the benefits of human endeavour (across class, caste, age, gender, race and other divisions), and cultural security.

Linked to these is a set of the following basic values (amongst others) that need to be respected:

1. *Diversity and pluralism*: the great plurality of ways of living (cultures, livelihoods, political and governance systems, all of these relating to diverse ecological conditions), that have characterized the ages, many of which continue even in 21st century India, with none having the predominant status of being the 'mainstream,' moving away from the homogenizing tendency of globalization.
2. *Cooperation and the 'commons'*: the conduct of life predominantly through forms of collective cooperation, treating resources for survival as the commons, as opposed to the cutthroat competition and privatization that globalization thrives on.
3. *Rights with responsibilities*: the full range of community and individual human rights, including the right to a healthy and fulfilling environment, but with the full responsibility of *ethical citizenship*, where individuals and collectives are responsive to each other's needs and rights, and to the needs and rights of non-human nature.
4. *Dignity of labour*: equity between intellectual work and physical labour, as opposed to the premium given to the former.
5. *Subsistence lifestyles*: ways of living that are not predominantly profit-oriented, with low ecological footprints and greater control by communities and citizens.
6. *Simple living and the qualitative pursuit of happiness*: the pursuit of knowledge, happiness, and satisfaction through cultural and social interaction, in which simple (not necessarily austere) lifestyles become a norm, replacing the endless accumulation of material goods as central human goals.

7. *Customs and social norms*: reliance on customs and norms (not necessarily written) as much as on coded policies and statutory laws, to regulate all forms of human behaviour; but freed of the class, caste, gender and other inequities they are sometimes characterized by.
8. *Non-violence*: not doing harm to fellow human beings (including those of future generations), and to non-human species; this includes moving away from the violence inherent in the current model of 'development' and globalization.
9. *Participation*: access to forums and avenues of participation in all matters impacting one's life, local to global.

Taking the above principles together (and undoubtedly others that can be added), RED is a continuous and mutually respectful dialogue amongst human beings, and between humanity and the rest of nature. It is also not *one* solution or blueprint, but a great variety of them. One of the first mistakes we must immediately correct is the imposition of one economic model, or indeed one model of governance, education, health, and environmental management, on the enormous diversity of ecological and cultural situations that defines India.

These would include systems once considered valuable but now considered outdated and 'primitive': subsistence economies, barter, local *haat*-based trade, oral knowledge, work-leisure combines, the machine as a tool and not a master, local health traditions, handicrafts, learning through doing with parents and other elders, frowning upon profligacy and waste, and so on. This does not mean an unconditional acceptance of traditions — indeed there is much in traditional India that needs to be left behind — but rather a re-considered engagement with the past, the rediscovery of many valuable practices which seem to have been forgotten and building on the best of what traditions offer. This is *not* the kind of revivalism that India's right-wing Hindu chauvinists talk about; traditions need to be rescued from those who use them in a bigoted way (on which, see an incisive essay by Sharma 2009).

Localization

Localization, a trend diametrically opposed to globalization, is based on the belief that those living closest to the resource to be managed (the forest, the sea, the coast, the farm, the urban facility etc.), would have the greatest stake, and often the best knowledge, to manage it. Of course, this is not always the case, and in India many communities have lost the ability because of two centuries of government-dominated policies, which have effectively crippled their own institutional structures, customary rules, and other capacities.

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BOX 2: Agricultural Transformations

In the low-rainfall region of Zaheerabad, Andhra Pradesh, Dalit women have brought about an agricultural revolution in 75 villages. Mobilized under the banner of the Deccan Development Society, women's *sanghas* (assemblies) have used a mix of organic farming and pastoralism, traditional seed diversity, economical water use, community grain reserves, links with consumers including through the Public Distribution System and an organic restaurant, celebration of biodiversity as part of cultural events and festivals, outreach through locally generated media, and a host of other measures. This has helped transform a situation of chronic food shortage, unemployment, and dependence on government, particularly amongst Dalit women and other disprivileged sections, into one of self-sufficiency, dignity, and control over their own lives (www.ddsindia.com).

Other such initiatives have been facilitated by the NGO Green Foundation

in Karnataka (<http://www.greenconserve.com/>), and the Jaiv Panchayat network of Navdanya (<http://www.navdanya.org/campaigns/jaiv-panchayat>).

For localization to succeed, it is crucial to deal with the socio-economic exploitation that is embedded in India's caste system, inter-religious dynamics, and gender relations. Such inequities can indeed be tackled, as witnessed in the case of Dalit women gaining dignity and pride through the activities of Deccan Development Society in Andhra, Dalits and 'higher' castes interacting with much greater equality in Kuthambakkam village of Tamil Nadu, and Adivasi children being empowered through the Narmada Bachao Andolan's *jeevan shalas* (all described elsewhere in this chapter). In any case, there is little evidence that globalization has in any significant way reduced caste, religious, and gender exploitation, and indeed not brought in new forms of inequality.

Indeed, the 73rd and 74th Amendments to the Indian Constitution (mandating decentralization to rural and urban communities), taken to their logical conclusion, are essentially about localization.

Nevertheless, a move towards localization of essential production, consumption, and trade, and of health, education, and other services, is eminently possible if communities are sensitively assisted by civil society organizations and the government. The few examples given in this essay are amongst thousands of Indian initiatives at decentralized water harvesting, biodiversity conservation, education, governance, food and materials production, energy generation, waste management, and others (in both villages and cities) (Agarwal and Narain 1997; CEE 2002; Satheesh 2002; Pathak 2009; for several dozen case studies, see http://planningcommission.nic.in/reports/sereport/ser/seeds/stdy_seed.htm; see also *Down to Earth* Special issue 'Good News,' at <http://www.downtoearth.org.in/default20090115.htm>). Nor are these only initiated by civil society groups. Indeed, the 73rd and 74th Amendments to the Indian Constitution (mandating decentralization to rural and urban communities), taken to their logical conclusion, are essentially about localization.⁶

6. Decentralization has so far had very mixed impacts in India; widespread bureaucratic resistance, local power-play, and lack of capacity amongst communities to handle decentralized functions, have undermined implementation across much of India, but in many states organized communities and civil society groups, and sensitive officials, have also managed to utilize it for people's benefit. For a detailed review, see various essays in Jayal (2006).

BOX 3: Conservation Democracy

Across the country there are literally thousands of community-led efforts at protecting and regenerating forests, wetlands, grasslands, and coastal/marine areas, as also wildlife populations and species (several case studies and State/national analyses are presented in Pathak 2009). Such 'community conserved areas' (CCAs) are a crucial reason for the continued presence of natural ecosystems and wildlife even amidst dense human

population. An important component of these initiatives is the enormous diversity of rules and institutions that communities have developed, for governance and management. Institutions for management range from a small youth committee to the full *gram sabha* (village assembly), and the rules can be oral or written, traditional or new, usually accompanied by varied sanctions and penalties for violation.

'Communitization' (providing greater local control) of education, health and other aspects has been successfully tried by the government of the north-east State of Nagaland (<http://www.nenanews.com/ANE%20June%201-15,%2007/special%20report1.htm>, accessed 1 June 2009).

Working at the Landscape Level

The local and the small-scale are not by themselves adequate. For many of the problems we now face are at much larger scales, emanating from and affecting entire landscapes (and seascapes), countries, regions, and indeed the earth. Climate change, the spread of toxics, and desertification, are examples. Landscape and trans-boundary planning and governance (also called 'bioregionalism,' or 'ecoregionalism,' amongst other names), are exciting new approaches being tried out in several countries and regions. These are as yet fledgling in India, but some are worth learning from. The Arvari Sansad (Parliament) brings 72 villages in the State of Rajasthan together, to manage a 400 sq.km river basin through inter-village coordination, making integrated plans and programmes for land, agriculture, water, wildlife, and development (Hasnat 2005: 16–17; <http://www.tarunbharatsangh.org/programs/water/arvariparliament.htm>, accessed 1 June 2009). This is part of an effort to create water self-sufficiency in an arid zone, over several hundred villages, through decentralized harvesting and strict self-regulation of use, initiated by the community NGO Tarun Bharat Sangh. In Maharashtra, a federation of Water User Associations has been handed over the management of the Waghad Irrigation Project, the first time a government project has been completely devolved to local people (Paranjape and Joy undated).

Landscape and trans-boundary planning and governance (also called 'bioregionalism,' or 'ecoregionalism,' amongst other names), are exciting new approaches being tried out in several countries and regions.

Working at the landscape necessarily envisages thinking across political and cultural boundaries. In a detailed exercise conducted as part of the National Biodiversity Strategy and Action Plan process (TPCG and Kalpavriksh 2005), such planning was envisaged for 10 such landscapes across India. These pointed to the need to:

1. Delineate appropriate ecological boundaries, e.g., those defined by mountain ranges, rivers and river basins, coasts, etc.
2. Understand the dynamics of various ecological factors within these boundaries.
3. Overlay these boundaries and interactions with socio-cultural and political ones, highlighting the possible convergences, e.g., when district or State boundaries match those of watersheds or mountain ranges.
4. Consider planning and management mechanisms for the eco-regions thus defined, including, building from the grassroots as described below, one or more institutions that can be charged with these tasks.

Building on decentralized and landscape level governance and management, and in turn providing it a solid backing, would be a rational land use

Building on decentralized and landscape level governance and management, and in turn providing it a solid backing, would be a rational land use plan for each bioregion, State and the country as a whole.

BOX 4: Sustainable and Democratic Cities

Moving away from the classic model of a city, parasitically dependent on the countryside for all its needs, is precisely what Bhuj, the district headquarters of Kachchh (Gujarat), is aiming for. Civil society and consultancy groups like Hunnarshala, Sahjeevan, Kutch Mahila Vikas Sangathan, and ACT, have teamed up to mobilize slumdweller, women's groups, and other citizens into reviving watersheds and creating a decentralized water storage and management system, manage solid wastes, generate livelihood for poor women, create adequate sanitation, and provide dignified housing for all. The process is also re-establishing common spaces for all to use, and informed citizens' involvement in the full planning process to realize the vision of the 74th Amendment of the Constitution (providing for urban decentralization). Deeper democratic processes in the context of a city are also the aim of processes in Bangalore, initiated

by the network Janaagraha. Its approach is characterized by taking a regional perspective of the city (looking at linkages with Bangalore's surrounds), empowering citizens (including children and the youth) with information regarding their rights and roles in urban processes, enabling citizens and officials with the skills necessary for improved urban planning, and facilitating direct responsibility, accountability and transparency of agencies towards citizens. In Delhi, the NGO Parivartan has facilitated greater citizens' access to government offices, helped people in lower income class colonies obtain better services including by challenging the massive fraud in ration (fair price) shops, and forced the government to abandon a proposed World Bank funded project that would have hiked up water costs with the poor bearing the brunt (www.hunnar.org; www.janaagraha.org; www.st-award.org; Baviskar 2010).

plan for each bioregion, State and the country as a whole. This plan would permanently put the country's ecologically and socially most fragile or important lands into some form of conservation status (fully participatory and mindful of local rights and tenure). Such a plan would also enjoin upon towns and cities to utilize as much of their resources from within their boundaries as possible, through water harvesting, rooftop and vacant plot farming, decentralized energy generation, and so on; and to build mutually beneficial rather than parasitic relations with rural areas from where they will still need to take resources. The greater the say of rural communities in deciding what happens to their resources and the greater the awareness of city-dwellers on the impacts of their lifestyles, the more this will happen.

Ultimately as villages get re-vitalized through locally appropriate development initiatives, rural-urban migration which today seems inexorable, would also slow down and may even get reversed ... as has happened with villages like Ralegaon Siddhi and Hivare Bazaar in Maharashtra, those in Dewas district of Madhya Pradesh where Samaj Pragati Sahayog is active, and those in Alwar district of Rajasthan where Tarun Bharat Sangh works (Pangare and Pangare 1992; Sakhuja 2008; <http://www.fao.org/docrep/x5669e/x5669e06.htm>, accessed 1 June 2009; Anand undated; www.tarunbharatsangh.org; www.samprag.org).

Governance, Local to National

Central to the notion of RED, is the practice of democratic governance that starts from the smallest, most local unit, to ever-expanding spatial units. A number of theories of democracy or governance have expounded on this, across the broad spectrum of political ideologies (Markovic 1994; Gandhi 2008; Morrison 1995). In each of these, and crucial to the concept of RED, is the combination of rights and responsibilities posited above.

In India, the Constitution mandates governance by Panchayats at the village and village cluster level, and by ward committees at the urban ward level. However, these are representative bodies, subject to the same pitfalls that plague representative democracy at higher levels. It is crucial to empower the *gram sabha* (village assembly) in rural areas, and the *area sabha* (smaller units within wards) in cities, or other equivalent body where all the adults of the individual hamlet or village or urban colony are conveniently able to participate in decision-making. All critical decisions relating to local natural resources or environmental issues should be taken at this level, with special provision to facilitate the equal participation of women and other underprivileged sections.

Larger level governance structures need to essentially emanate from these basic units. These would include clusters or federations of villages with

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BOX 5: Local Self-Governance and Planning

The Gond Adivasi village of Mendha-Lekha, in the State of Maharashtra, with a history of involvement in mass movements against big dams and industrial deforestation, takes decisions involving all its adults. For these decisions it uses information generated by *abhyas gats* (study circles involving villagers and where necessary, external experts). Decisions are taken only by consensus, creating a high stake in their implementation. All government departments have to seek consent of the *gram sabha* for their activities. In the last three decades, the village has moved towards fulfilment of all basic requirements of food, water, energy and local livelihoods, as also conserved 1800 hectares of forest. There is now the challenge of transferring the values of collective decision-making, and conservation, to new generations (Pathak and Gour-Broome 2001; Pathak and Tara-

porewala 2008; <http://www.indianexpress.com/news/gadchiroli-villages-get-rights-to-forests/554714/>).

An attempt at bringing citizens at the urban ward level into the planning process is the participatory budgeting exercise in a number of cities in India (and many other countries). The idea is for citizens to submit their priorities for spending, which are then converted into project proposals by official agencies or people's representatives; these then go back for citizen voting and then get incorporated into budgets and implementation plans. Amongst the first to initiate this process was Bangalore, followed by Hubli-Dharwad and Pune. This process is still only one step in the direction of deeper democratic urban planning, but a significant one, since funds allocation and use is often the main stronghold of a minority in power (Menon 2009).

Land and water regeneration, and the resulting increase in productivity, could provide a huge source of employment, and create permanent assets for sustainable livelihoods.

common ecological features, larger landscape level institutions, and others that in some way also relate to the existing administrative and political units of districts and States. Governance across States, and across countries, of course presents special challenges; there are a number of lessons to be learnt from failed or only partially successful initiatives such as river basin authorities (Thakkar 2009b).

Employment and Livelihood

The combination of localization and landscape approaches also provides massive opportunities for livelihood generation, thus tackling one of India's biggest ongoing problems: unemployment. Land and water regeneration, and the resulting increase in productivity, could provide a huge source of employment, and create permanent assets for sustainable livelihoods. The National Rural Employment Guarantee Act (NREGA), one of the current government's flagship programmes, as also other schemes such as the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), could well be oriented towards such environment-employment combinations. Also important in the new 'green job' deal would be a renewed emphasis on labour-intensive rural industries and infrastructure, including handlooms and handicrafts, local

BOX 6: The Role of Knowledge

The most relevant knowledge for RED will also be that which disregards the artificial boundaries that Western forms of education and learning have created, between the 'physical,' 'natural,' and 'social' sciences, and between these sciences and the 'arts.' Ecological and human systems are not constituted by such neat boxes, landscapes are not amenable to easy boundaries between the 'wild' and the 'domesticated,' the 'natural' and the 'human.' The more we can learn and teach and transmit knowledge in holistic ways, giving respect not only to specialists but also to generalists, the more we can understand nature and our own place in it. In a number of countries, universities (ideally to be renamed 'multiversities') are already experimenting with such interdisciplinary and trans-disciplinary studies, encouraging students to cut across previously impenetrable boundaries. An even bigger challenge is to integrate modern and traditional knowledge in the institutions of learning, providing respectful places to

experts from the latter, sending students out to learn from 'ordinary' folks through new forms of the ancient system of apprenticeship, bringing back oral traditions, and so on. A number of alternative education and learning initiatives attempt to do this: schools like *pachasaale* of the Deccan Development Society in Andhra Pradesh, and the *jeevan shalas* ('life schools') of the Narmada Bachao Andolan struggling to save the Narmada valley and its inhabitants from a series of mega-dams; colleges like the Adivasi Academy at Tejgadh, Gujarat; open learning institutions like the Bija Vidyapeeth in Dehradun, Uttarakhand and others (<http://www.ddsindia.com/www/psaale.htm>; Suresh Kumar Challa, DDS, pers. comm, Dec. 2009; <http://www.ddsindia.com/www/Education.htm>; <http://www.narmada.org/ALTERNATIVES/jeevanshalas.html> <http://www.narmada.org/nba-press-releases/february-2009/17Feb.html>; <http://www.aktivasiacademy.org.in>; <http://www.navdanya.org/earth-university>).

The United Nations Environment Programme and the International Labour Organization estimate that there is considerable employment opportunity in 'green jobs,' defined as 'decent work' that helps to tackle the ecological crises we face.

energy projects, rural roads, and others that people can be in control of, building on their own traditional knowledge or with easily acquired new skills.

The United Nations Environment Programme and the International Labour Organization estimate that there is considerable employment opportunity in 'green jobs,' defined as 'decent work'⁷ that helps to tackle the ecological crises we face. For instance, organic, small-scale farming can employ more people than conventional chemical-based agriculture. Renewable energy generation, and energy efficiency, as yet in its infancy, could provide jobs to tens of millions (UNEP et al 2008). For both farming and energy (generation and efficiency), as also several other sectors, such as transportation, energy-efficient building, decentralized manufacture, recycling, forestry, and others, the potential in India must be truly astounding. Yet no comprehensive study on this potential has ever been carried out.

7. Decent work is defined by the International Labour Organization as opportunities for women and men to obtain dignified and productive work in conditions of freedom, equity, security and human dignity (http://www.ilo.org/global/About_the_ILO/Mainpillars/WhatisDecentWork/index.htm).

Economic Democracy

RED requires not only a fundamental change in political governance, but also in economic relations of production and consumption. Globalized economies tend to emphasize the democratization of consumption (the consumer as 'king' ...though even this hides the fact that in many cases there is only a mirage of choice), but not the democratization of production (Shrivastava 2009). This can only change with a fundamental reversal, towards decentralized production which is in the control of the producer, linked to predominantly local consumption which is in the control of the consumer.

Village-based or 'cottage' industry, small-scale and decentralized, has been a Gandhian proposal for decades. Such industry would be oriented to meeting, first and foremost, local needs, and then national or international needs. Since this would be a part of a localized economy in which producer-consumer links are primarily (though not only) local, the crucial difference between such production and current capitalist production is that it is for self and others, primarily as a service and not for profits (Kumarappa 1962).

Groups of villages, or villages and towns, could form units to further such economic democracy. In Tamil Nadu, the dalit panchayat head of Kuthambakkam village, Ramaswamy Elango, is organizing a cluster of 7-8 villages to form a 'free trade zone,' in which they will trade goods and services with each other (on mutually beneficial terms) to reduce dependence on the outside market and government. This way, the money stays back in the area for reinvestment in local development, and relations amongst villages get stronger. In Gujarat, the NGO Bhasha is promoting the idea of Green Economic Zones to encompass dozens of tribal villages, based on the 'concepts of sustainability, ecological sensitivity, and an ingrained understanding of the cultural roots of a people.' The Nowgong Agriculture Producer Company Ltd (NAPCL) in Madhya Pradesh and the Aharam Traditional Crop Producer Company (ATCPC) in Tamil Nadu are examples of farmer-run companies that enable producers directly reach their markets (www.goodnewsindia.com/index.php/Magazine/story/elango-kuthambakkam/; Sigantoria 2009; <http://www.bhasharesearch.org.in/Site.html#id=GEZ>; personal observations, November 2009; Avani Mohan Singh, NAPCL Board, pers. comm., 2009; Ghate 2009).

Money may remain an important medium of exchange, but would be much more locally controlled and managed rather than controlled anonymously by international financial institutions and the abstract forces of global capital operating through globally networked financial markets. Considerable local trade could revert to locally designed currencies or barter, and prices of products and services even when expressed in money terms could be decided

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between givers and receivers rather than by an impersonal, non-controllable distant 'market.' A huge diversity of local currencies and non-monetary ways of trading and providing/obtaining services are already being used around the world (Cohen-Mitchell 2005; see also International Journal of Complementary Currency Systems, at <http://www.uea.ac.uk/env/ijccr/index.html>). The 'free trade zone' and the Adivasi 'green economic zone' mentioned above, are just two examples of what locally democratic trade relations could look like.

Financial management itself needs to be radically decentralized, away from the mega-concentrations that today's banks and financial institutions represent. These globalized institutions and the free rein given to their speculative tendencies, have been at the heart of the latest financial crisis. But simultaneously, across the world a host of localized, community-based banking and financing systems have also cropped up over the last couple of decades (Morrison 1995: 195–97).

Will big industry still have a place? Perhaps, though this will depend on what future societies, far more conscious of the ecological and social impacts of production and consumption, will want to produce. Moreover, the choice of technologies will be a matter of open public discussion and argument, rather than being unilaterally decided by powerful corporations. But even if big industrial units are necessary, they will only be the last resort for products that small-scale industry simply cannot make.

The Role of the State

Though communities (rural and urban) will be the fulcrum of the alternative futures, the state will need to retain, or rather strengthen, its welfare role for the weak (human and non-human). It will assist communities in situations where local capacity is weak, such as in generating resources, providing entitlements, and ensuring tenurial security. It will rein in business elements or others who behave irresponsibly towards the environment or people. It will have to be held accountable to its role as guarantor of the various fundamental rights that each citizen is supposed to enjoy under the Constitution of India, including through appropriate policy measures such as the Right to Information Act the government brought in in 2005. Finally, it will retain a role in larger global relations between peoples and nations.

International Relations

The reversal of economic globalization does not entail the end of global relations! Indeed, there has always been a flow of ideas, persons, services and materials across the world, and this has often enriched human societies. RED.

Financial management itself needs to be radically decentralized, away from the mega-concentrations that today's banks and financial institutions represent. These globalized institutions and the free rein given to their speculative tendencies, have been at the heart of the latest financial crisis.

with its focus on localized economies and ethical lifestyles, learning from each other, would actually make the *meaningful* flow of ideas and innovations at global levels much more possible than a situation where everything is dominated by finance and capital.

India needs to build much better relations with neighbouring countries, based on our common ecological, cultural, and historical contexts. Transboundary landscape and seascape management would be an example, including 'peace zones' oriented towards conservation where there are currently intense conflicts (e.g., the Siachen glacier between India and Pakistan). More globally, strengthening various treaties on peace, rights and the environment are a key agenda.

Much more needs to be said about this, but this essay is not focusing on the international dimension as such.

Is Such a Transformation Possible?

RED entails huge shifts in governance, and will be resisted by today's political and corporate power-centres. But in India, there are many signs that a transformation is possible over the next few decades, including:

1. *Growing civil society mobilization to resist elements of the dominant economic growth model:* There has been a marked growth in mass movements against destructive development projects, especially amongst communities most impacted by displacement or the degradation of their environment, supported by civil society groups in urban areas (Shiva et al, 1991; Agarwal et al, 1994; *Humanscape*, special issue on movements, October 2000; Kothari et al, 2003; Oommen, 2008; ICR 2010).
2. *Civil society facilitating basic needs:* The repeated failure of the state to deliver on many counts, has prompted civil society organizations (community-based, or NGOs) to take on the role of provision of basic facilities and amenities, and of facilitating local empowerment, as illustrated in examples in this chapter. But care is needed that they do not exempt the state from its roles as described above.
3. *Policy shifts and reforms:* Civil society advocacy and initiatives by progressive individuals from within the state itself, has led to some policy shifts and reforms that are against the general trend of economic globalization. Three recent legislative measures are examples: the Right to Information Act 2005, the National Rural Employment Guarantee Act 2006, and the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006. Each of these has

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a base in people's initiatives; e.g., the RTI emerged from grassroots struggles in Rajasthan, Delhi and elsewhere, led by groups like the Mazdoor Kisan Shakti Sangathan (MKSS) demanding access to official records on employment and funding (Kidambi undated; Baviskar 2010; <http://www.mkssindia.org/node/41>).

4. *Technological shifts:* Many technological innovations are making human life not only less dreary but also more ecologically sensitive, in industrial and agricultural production, energy, housing and construction, transportation, household equipment. There is also growing appreciation of the continued relevance of many traditional technologies, e.g., in agriculture, textiles and other manufacturing, and other fields. Countries in a 'developing' stage have the unprecedented opportunity to leapfrog directly from some of the most wasteful industrial, energy, and transportation technologies, into super-efficient ones, provided they are given the opportunity and support to do so by the industrialized world.
5. *Financial measures:* A range of reforms in macro-economic and fiscal policies have been suggested to move towards greater sustainability. Shifting subsidies from ecologically destructive practices such as chemical-heavy agriculture, to truly sustainable ones like organic farming, are one powerful set of changes that a number of civil society groups have demanded in India. Taxes that reflect something of the true value of natural resources being used by urban and industrial-scale consumers, discourage ecologically destructive practices including consumerism, and reduce income disparities, would also contribute substantially.
6. *Awareness, education, capacity:* Ecological and social awareness and the capacity to deal with associated problems have risen exponentially in the last 2–3 decades. Yet, amongst decision-makers and business elites it remains particularly poor. A transition to RED will require a massive campaign to spread awareness about the multiple crises we face and their root causes, and to build capacity to spread meaningful solutions.

India is perhaps uniquely placed to achieve the transformation to RED. This is for a variety of reasons: its thousands of years of history and adaptation, its ecological and cultural diversity, its resilience in the face of multiple crises, the continued existence of myriad lifestyles and world views including of ecosystem people who still tread the most lightly on earth.

India is perhaps uniquely placed to achieve the transformation to RED. This is for a variety of reasons: its thousands of years of history and adaptation (including ancient democratic practices that perhaps pre-date even the famed Greek republics), its ecological and cultural diversity, its resilience in the face of multiple crises, the continued existence of myriad lifestyles and world views including of ecosystem people who still tread the most lightly on earth, the powerful legacy of Buddha, Gandhi, and other progressive thinkers, the

adoption of revolutionary thinking from others like Marx, zealously guarded practices of democracy and civil society activism, and the very many peoples' movements of resistance and reconstruction. But of course it cannot do this alone, it will need to convince, teach, and learn from, other countries and peoples, which too it has done for many centuries, but now in an entirely new and far more challenging context.

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