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TOWARD A SOCIOLOGY OF FOREST DECAY: THE INDIAN CASE *Report File CPR*

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Saving the trees is only the first step. Saving ourselves is the real goal.

Chandi Prasad Bhatt, pioneer of the Chipko movement.

In the recent flurry of attention in the West concerning the fate of the tropical forests, two views stand out. One, articulated most recently by the World Resources Institute in their Tropical Forests Action Plan, is targeted at the populations most directly affected by deforestation but appropriates the right to speak for them. A judicious plan of investment and organizational initiative coordinated at the highest policy levels, it suggests, can simultaneously solve the fuelwood crisis, meet shortages of industrial wood in a expanding global economy, and protect biological diversity in large areas of the globe. The alternate view, preferred by Western biologists who see themselves as spokesmen for the tropical forests, has an undisguised hostility toward subsistence populations and the agriculture they practice. Their solution is to impose a system of national parks through much of the tropics, bought with Western money and owned and managed by biologists and their financial sponsors. As for the indigenous populations, these biologists are confident that the cultural upliftment provided by the national park would more than compensate for the loss of what they (being perfectly assured themselves of a supply of food) see to be the enervating and demeaning practice of agriculture.¹

I do not want to minimize the differences between the two approaches. Tropical biologists and wildlife ecologists are frankly imperialistic, and are quite explicit about their hostility to the cultures and economies of the rural populations who in a sense compete with them for territorial control of the forest. The global managers of WRI and

¹ For the former view, see World Resources Institute, *Tropical Forests: A Call for Action* (Washington 1985); for the latter, Daniel Jansen, "The Future of Tropical Ecology", *Annual Review of Ecology and Systematics*, 1986. Jansen's paper is a document of more than usual sociological interest; an aggressive statement of the need to expand the biologists imperium, its appearance in a respected scientific forum is indicative of the increasing willingness of scientists to abuse the honor and prestige accorded to them by society. Twelve years ago, in another imperialist manifesto (*Sociobiology*, Cambridge, Mass. 1975), E.O. Wilson suggested that the social sciences would be better off as subfields within biology; but in arguing for the virtual takeover of large areas of the world by Western biologists, Jansen goes far beyond even Wilson's fantasies. Readers are urged to see Jansen's manifesto for themselves. One quote will suffice here: "If biologists want a tropics in which to biologize, they are going to have to buy it with care, energy, effort, strategy, tactics, time, and cash."

its ilk speak in softer tones, and have a closer and more correct identification of the social and environmental implications of tropical deforestation. Yet they share in common an underlying structure of discourse, one peculiar to the cultural context from which both schools spring. They are both quintessentially *Western*, and in their elaboration bear the marks not merely of the battles being fought within Western environmentalism, but also of the domination which Western nations continue to exercise over the rest of the world. It is therefore the shared discourse which I would like to draw attention to, while keeping in mind its somewhat different articulation in the two cases.

I may note first of all their historical antecedents. The lineage of global ecological management may be traced to the studies of the Club of Rome, which called for the intervention of management elites in solving worldwide environmental problems. More recently, the focus of boardroom ecology has shifted to Washington, and WRI is only the last in a series of institutes (the finest and most low key being Worldwatch) whose disciplined research is uniformly marred by an overwhelmingly technocratic orientation and political naivette. The antecedents of imperial biology go back much further. Starting with the establishment of game parks by European colonialists in Africa, there has been a steady expansion of wildlife sanctuaries in the Third World handsomely funded by Western money and closely influenced by Western definitions of ecology and nature appreciation. This drive has been coordinated by organizations such as the World Wildlife Fund (WWF) and the International Union for the Conservation of Nature and Natural Resources (IUCN) which have the ear of political leaders and can also act as the fairy godmothers of biological research.²

While the physical location of the problem may be the tropics, there is a tacit acceptance that the social location of the debate surrounding its identification and resolution is the West. At one level, there is an attempt to convince Western publics that the problem is partly theirs too; managers argue that tropical deforestation will lead to worldwide climatic changes, biologists that loss of species diversity and wilderness areas will hurt Western tourist and scientific interests. Similarly, the decision makers both parties are most anxious to reach are located firmly in the West: thus the WRI targeted its proposals largely at the World Bank and other aid

² A incisive critique of boardroom ecology that has lost little of its force is Hans Magnus Enzensburger, "A Critique of Political Ecology", *New Left Review*, No. 32, 1974. Helge Kjekshus, in *Ecology Control and Economic Development in East African History* (Berkeley 1977) presents a fine analysis of the disruption of the human ecology of pastoralists by colonial wildlife policy; what we now need, if the sources will allow it, is an intellectual and political history of "Conservation imperialism".

agencies, biologists at the IUCN and the WWF. In either case, there is an undoubtedly correct awareness that given the enormous influence such bodies exercise in the Third World, this is the most politically safe strategy.

An important consequence of the Western location of these debates is that both parties succumb to the notion that it is money - and money alone - that can solve the problem. The WRI estimates that if only Western patrons would come up with 5320 million dollars, and spend it in the proportions and geographical settings that it advocates, the tide of deforestation would be reversed. The biologists are somewhat more canny : "dont just throw money at the problem," they seem to be saying, "give it to us". Both schools prefer profoundly unhistorical treatments of the forest question, and shy away ~~from~~ from an analysis of the larger economic and political structures in which the forest is embedded. There is a conspicuous reluctance to use the language of class and especially colonialism (an unmentionable word in these circles) - though whether this is due to intellectual poverty or out of deference to their audience it is difficult to say.

The two views represent different attempts at setting up a body of certified "experts" who would decide the fate of the tropical forests and the people who live in and around these forests: a priesthood of managers in the one case, a priesthood of biologists in the other. But between the designs of imperial managers and imperial biologists respectively is a large space, one inhabited by rural populations and their declining forests. This is the space where the real battles are being played out, and a close attention to the voices of its participants is the dimension totally lacking in the debates in Western scientific and environmental circles.

A historical and sociological analysis of forestry in one Third World country, this article provides an alternate perspective on forest decay and forest renewal. Although my selection was dictated by geographical and cultural familiarity, there are several reasons why India constitutes a particularly apt test case. A large and complex country with a variety of ecological regimes, within its borders one can find living examples of virtually every form of productive activity known to humans - from hunter gatherers to super computers. Unlike most other Third World countries, it has enjoyed the benefits - such as they are - of a sophisticated and widely hailed system of state forestry for well over a century. It has also since 1947 embarked upon an ambitious program of planned industrialization, which, whatever its shortcomings, is firmly independent of Western political and economic influence. As a functioning democracy, it has in recent years seen the emergence of a vocal environmental movement. There

is in particular an intense debate at all levels - government, scientific, and popular - on the social and environmental implications of alternate forest policies.

II TRADITIONAL CONSERVATION SYSTEMS

Economists have suggested that common property resources are likely to emerge when a resource is moderately abundant. In pre-colonial India, a variety of social groups exercised a claim on forest resources in different regions - hunter gatherers, shifting cultivators, plough agriculturists, pastoralists, artisans, and urban populations. While relatively abundant, forests were also a resource too large for one family to control. The fragmentary historical evidence that is available reveals a wide variety of social arrangements whereby the forests were managed by rural communities in different parts of India.³ These included

1. *Religious means* : In many parts of India, patches of woodland were designated sacred, with no one allowed to injure the vegetation in any way. Ranging in extent from a few hectares to several hundred square metres, sacred groves were widely dispersed throughout the subcontinent. They have been reported as still in existence in areas as far flung as the northern Himalaya and the southwestern coastal districts of Karnataka and Kerala. Their connection with religious practices is often explicit, as witness the numerous groves around temples. As what Dietrich Brandis, the first Inspector General of Forests, called the "traditional form of forest preservation in India," sacred groves have played a significant role in the retention of tropical biological diversity.⁴

2. *Community sanctions* : Alongside the designation of sacred groves where access was prohibited, village communities practiced a system of rotational management of woodland. In many villages, the utilization of the community forest was regulated by a socially accepted system of norms and sanctions, wherein the quantum of fuel, fodder,

³ For an overview of traditional conservation practices in India, see Madhav Gadgil, "Social Restraints on Resource Utilization", in D. Pitt and J.A. Mcneely, editors, *Culture and Conservation* (Dublin 1985)

⁴ See, inter alia, D. Brandis, *Indian Forestry* (Working 1897); S.M. Edwardes, "Tree Worship in India", *Empire Forestry*, Vol. 1, No. 1, March 1922; M. Gadgil and V.D. Vartak, "Sacred Groves of the Western Ghats in India", *Economic Botany*, Vol. 30, No. 1, 1976.

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and small timber available to each family was carefully regulated. Exceptions were made only in the case of religious festivals or when timber was required for community purposes such as the construction of a school. Offenders were penalized by fines and occasionally by social boycott. In the period before formal state management, the writings of colonial officials indicate, considerable areas of grazing ground and fuelwood reserves were under various forms of communal management. Where forests remain in the control of local communities, and especially in remote areas untouched by commercial penetration, these forms of communal action continue.⁵

3. *Territorial Partitioning* : The third important form of indigenous nature conservation involved the territorial and seasonal partitioning of resources among different social groups. Examples of such partitioning include cooperative management of forests by neighbouring villages; seasonal shifts in control and use of a resource, notably between settled cultivators and nomadic pastoralists, wherein nomads had access to forests and grazing land in the cold season in exchange for manure and other services; and the allocation of wild life species for the exclusive use of different hunting castes. Evolved to minimize competition among different castes and thereby inhibit over-exploitation, these social mechanisms can help explain the persistence and coherence of the Indian caste system as an ecological adaptation.⁶

4. *Tree Planting* : Finally, we have the actual planting of trees for future use. In the Kumaun Himalaya, for example, many wooded areas were not of spontaneous growth and bore marks of the hillman's penchant for the plantation and preservation of the forest - indeed, the "spacious wooded areas extending over mountain ranges and hill sides [bore] testimony to the care bestowed upon them by the successive generations of the Kumaunies."⁷ The Apa Tani peasants of the Subansiri valley likewise acted "entirely from a sense of responsibility towards future generations" in planting species whose span of maturity far exceeded a human lifetime.⁸

III

STATE FOREST MANAGEMENT, c. 1864-1985

⁵ See my article "Scientific Forestry and Social Change in Uttarakhand", *Economic and Political Weekly*, Bombay (hereafter EPW), Special Number 1985, pp. 1939-40, 1947, and sources cited therein.

⁶ See M. Gadgil, "Towards a Ecological History of India", EPW, Special Number 1985.

⁷ G.B. Pant, *The Forest Problem in Kumaun* (Allahabad 1922), pp 30-31.

⁸ C. Von Furer Haimendorf, *Himalayan Barbary* (London 1955), pp 62-63.

One important reason for the persistence of common property resources - and the social institutions that governed their use - was that in the pre-colonial period the state showed very little interest in the management or commercial development of the forest. Exceptions to this rule included hunting preserves and forests for elephants at a time when they were needed for military purposes. These examples of conscious state intervention were few and far between - in general, under the chiefdoms that preceded the Raj in different parts of the subcontinent, "anyone was accustomed, without let or hindrance⁹, to get what he wanted from the forest, to graze his cattle where he liked and to clear jungle growth wherever he listed." ¹⁰

There was a radical change following the consolidation of British power in India. While markedly indifferent to forest conservancy in the early decades of their rule, the British expressed concern over the dwindling stock of durable timbers needed for the ambitious program of railway building undertaken after the major rebellion of 1857. Crucial both for troop mobility and for trade, the railways were crucial to the perpetuation of colonial rule, and a shortage of timber for railway ties brought home forcefully the need to start working forests for sustained commercial production. Lacking a tradition of "scientific" forestry, the British called in German experts to start the Indian Forest Department. The formation of the new department led to the enactment of detailed laws to consolidate state monopoly and facilitate timber production.

Let me pass over the details of colonial forest policy, legislation, and management ^{,11} and emphasize only its salient features. First of all, it was characterized by a overwhelmingly commercial orientation. The forests were to be managed for strategic imperial needs - mainly the railways, but also for supplies during the two world wars. The silvicultural agenda of colonial foresters was the transformation of mixed forests to monocultural stands of species with an established marketable value. There was also a considerable emphasis on generating increasing monetary revenue from forest operations.

A corollary of this emphasis was the neglect of rural claims on the forest. As an agricultural chemist advising the British government remarked in 1893, the new department's ^{aims} were

⁹ "Without let or hindrance" from the state, that is, but subject to the community norms mentioned above.

¹⁰ Anon, "Forest Conservancy in India", *Indian Forester*, Vol. 19 (1891), p. 262. ✓

¹¹ See Ramachandra Guha, "Forestry in British and Post British India: A Historical Analysis", in two parts, EPW, 29 October and 5-12 November 1983. X

in no sense agricultural, and its success was gauged mainly by fiscal considerations; the Department was to be a revenue paying one. Indeed, we may go so far as to say that its interests were opposed to agriculture, and its intent was rather to exclude agriculture than to admit it to participation in the benefits.¹²

Under the new system of management villagers were excluded in both a physical and social sense: while the punitive sanctions of the forest act were aimed at restricting physical access, at the same time they were allowed only a marginal and inflexible claim on forest produce, with the act sharply limiting the amount of fuel, fodder, etc. available to each family. Yet the failure of British forest management was not merely social (to be expected given the imperatives of colonial rule) but ecological as well. At the time, the British were themselves world leaders in deforestation, having put paid to the forests of Ireland, New England, Southern Africa and other colonial territories. Yet the German foresters requisitioned by them were also unable to successfully transplant a system of temperate forestry to India. The mixed tropical forests were ecologically complex compared to Continental forests, growth curves for timber species were unknown, and there was not enough time to accumulate the required silvicultural knowledge. In the circumstances, "sustained yield" forestry was impossible to achieve, and regeneration of secondary forests continued to be very poor over large parts of India.¹³

The edifice of colonial forestry was inherited - with much else - by the government of independent India. It was immediately put to work in the service of the ambitious program of planned industrial development undertaken by the new state. We can identify three distinct stages in the evolution of forest policy in post colonial India.

The first stage was initialled by the National Forest Policy of 1952, which accepted the fundamental premises of the colonial policy statement of 1894 - viz. state ownership and control, and the primacy of the "national interest" (as defined by the state) over the interests of villages situated close to the forest.¹⁴ As national interest was virtually equated with industrial growth, forests were managed primarily for

¹² J.A. Voelcker, *Report on Indian Agriculture* (2nd edition; Calcuta 1897), pp 135-36.

¹³ For an ecological critique of colonial forestry, see M. Gadgil, S.N. Prasad, and R. Ali, "Forest Management and Forest Policy in India: A Critical Review", *Social Action*, New Delhi, Vol. 33, No. 2, 1983.

¹⁴ Anon, *The National Forest Policy of India* (New Delhi 1952).

industry. Massive subsidies of forest raw material were given to private and public industrial units - thus bamboo was sold to paper mills at less than half a rupee per tonne at a time when the market rate was close to 500 rupees a tonne. In this period, the forest department continued to rely on "sustained yield" methods under the selection system.

The failure of "traditional" methods of forest harvesting to meet rising industrial demands led to their being supplemented by the more aggressive method of plantation forestry. One of the early proponents of monoculture plantations, an expert of the Food and Agricultural Organization advising the Indian government, justified them on the grounds that an "expanding economy on the eve of modern industrialization requires the *highest* tonnage of production of organic raw materials within the *shortest* possible period and at the *lowest* possible cost."¹⁵ The following two decades saw the largescale conversion of natural forests through clearcutting and artificial regeneration of other species. This attempt to increase economic productivity relied on two kinds of monocultures: Eucalyptus and caribbean pine for industrial use, and teak for export. Yet this strategy also failed to meet the growing industrial requirements. Yields were much lower than anticipated (between 10-20 % of expected yields on the average). In some areas, the new plantations were attacked by disease. In parts of the Western Ghats, for example, eucalyptus plantations were wiped out by the fungal "pink" disease, leading to the effective conversion of tropical rain forests to man made desert. In other areas, the plantations were attacked by the local population for whom the new species had replaced forests of far greater economic and cultural value.¹⁶

The failures of plantation forestry led to the third stage - viz. the highly controversial social forestry programs launched since 1978 with substantial international funding.¹⁷ These programs have 3 components: farm forestry on individual land, community woodlots on common land, and plantations on government land. Reviews by independent researchers and official agencies clearly show that only the farm forestry program has been a success. But the most interesting finding concerns the preferred species. Most farmers plant eucalyptus, a species with a steady commercial demand. More surprisingly, in a program ostensibly meant to solve the rural energy crisis, nearly 80% of the seedlings distributed by the government have

¹⁵ J.A. Von Monroy, *Report to the Government of India on the Integration of Forests and Forest Industries* (Rome 1960), p. 8, emphasis added.

¹⁶ For a devastating critique of plantation forestry, see Gadgil et al, op.cit.

¹⁷ A comprehensive critique of "social forestry" in India is V. Shiva, H.C. Sharatchandra, and J. Bandopadhyay, "Social Forestry - No Solution Within the Market", *The Ecologist*, Vol. 12, No. 4, 1982.

been of eucalyptus. There has been a veritable eucalyptus revolution all over the country, with nearly 1 million hectares being brought under different varieties. With most of the wood finding its way to pulp mills, the program has come under sharp attack. Critics have advanced both social and environmental arguments against eucalyptus. Whatever its precise impact on the water table and the soil, it is clear that in a social sense eucalyptus farming has exacerbated rural inequalities. As it needs far less labor input than the agricultural crops it replaces, eucalyptus represents a loss of employment for the landless and quite possibly an increase in the price of food and fuel as well.¹⁸ Clearly, the primary benefits of the eucalyptus epidemic have been rich farmers and industry. It is a paradigmatic case of private enterprise reaching out to private enterprise, *bypassing* the state. Faced with declining supplies of raw materials from state forests, industry has turned to the more efficient and productive commercial farmer.¹⁹

If the demands of the commercial and industrial sector have replaced strategic imperial needs as the cornerstone of forest policy, there is a remarkable continuity in the legal and administrative underpinnings of colonial and post colonial forestry. The latter has accepted the colonial system of forest management in its affirmation of state monopoly and control, in its commercial orientation, and in the physical policing of the forest to keep out the poor. More recently, the afforestation programs undertaken and encouraged by the government - both farm forestry and clearcutting - have not addressed questions of social equity and environmental stability while pursuing commercial ends. In this sense, one could say that the recent afforestation of parts of India has been as anti-poor as the continuing deforestation in other parts of the country.²⁰

IV

THE FOREST AS AN ARENA OF CONFLICT

Succinctly stated, state forestry has resulted in the takeover of over one-fifth of India's land area with very little benefit - and great deprivation - for the great majority of

¹⁸ Where eucalyptus displaces food crops, it represents a loss of food (earlier being given in lieu of wages, and now purchased at a higher real cost in the market) and fuel (earlier available in the form of agricultural residues supplied free by the landlord) for farm workers.

¹⁹ A study conducted by S.N. Prasad (personal communication) found eucalyptus plantations on farmland to be 10 times as productive as comparable plantations on government land.

²⁰ See Anil Agarwal's brilliant World Conservation Lecture, "Human-Nature Interactions in a Third World Country", *The Environmentalist*, Vol.6, No.3, 1986.

India' population. Especially for the lower classes in agrarian society, those most directly dependent on the forest for subsistence, the transition from communal to state management has been unprecedented in its scope, swiftness, and severity. The earlier, community oriented system, rested on a set of *internal* constraints on the over-exploitation of the forest. By constraint, the new system depended - and continues to depend - on a set of *external* constraints whereby the state polices the forest from its subjects.

Clearly, the earlier system enjoyed a far greater legitimacy in the eyes of the peasantry, for whom the state or its representative, the forest department, have never been the legitimate agency for managing the forest. The legitimacy of the state has been questioned by the many and widespread movements in different parts of India since the earliest days of commercial forestry. The different groups adversely affected by the new regulations limiting access to the forests - huntergatherers, shifting cultivators, plough agriculturists, pastoralists, and artisans - have made their dislike of state control evident in no uncertain terms. Their resistance to its workings has embraced forms of protest that minimize the element of confrontation with instituted authority - notably the continuing breaches of the forest act - as well as violent rebellions that openly challenge the right of the state to own and manage the forest. In the colonial period this resistance was remarkably sustained and widespread. Major revolts specifically concerned with forest grievances rocked Gudem-Rampa in 1876-78 and 1922-23, Tehri Garhwal in 1906 and 1930, Bastar in 1910, Kumaun in 1916 and 1921, and Adilabad in 1940. In a less overt but equally effective way, peasants also thwarted the aims of commercial forestry through non-cooperation with forest laws and forms of directed arson and sabotage.²¹ Nor has the opposition to state forestry subsided in the decades since India achieved Independence. Although the Chipko movement of the Central Himalaya is the most well known, the past decade and a half has seen the reemergence of peasant movements centering around the question of access to forests in many parts of India.²²

At the risk of some simplification, I would argue that these different movements, notwithstanding the enormous variation in social base and intensity, have raised two central questions concerning the direction of forest management. Firstly, they have argued that the *control* of woodland should continue to vest in communal hands, and

²¹ See Ramachandra Guha, "Forestry and Social Protest in British Kumaun, c. 1893-1921", in Ranajit Guha, editor, *Subaltern Studies IV* (New Delhi 1985), and Ramachandra Guha and Madhav Gadgil, "Forestry and Social Conflict in British India" (in press), for a detailed account and analysis of resistance to colonial forest management.

²² See People's Union for Democratic Rights, *Undeclared Civil War* (New Delhi 1982).

that the state has no right to usurp the ownership of the forests. In the movement of 1906 in the state of Tehri Garhwal, for example, the villagers "objected to *any* state interference with forest over which they claimed *full* and *exclusive* rights."²³ In other areas too the evolution of agrarian protest similarly reflected the contending claims of peasants and the state. Thus village arsonists typically chose as their target blocks of forest especially valuable to the state. Secondly, the opposition to state forest management also contrasted the subsistence use of villagers with the commercial orientation of the state. Peasant leaders frequently used vivid metaphors that captured this transition from subsistence to commercial use: a transition, they argued, which had telling consequences for the village economy.²⁴

These two facets of peasant opposition may best be seen in terms of a paired contrast: state control being paired with commercial use on the one hand, and village control being paired with subsistence use on the other. While protest brought to the fore alternate conceptions of property and use, it must also be stressed that it was not merely utilitarian in nature. For the clash between state forestry and village management was not only an economic one: the contending management styles rested on fundamentally different notions of the forest, on radically different systems of meanings. Not surprisingly, the social idiom of agrarian protest strikingly reflected the threat to traditional cultural and communal values that commercial forestry represented. This is evident in the religious idiom frequently used by peasant rebels to justify their actions. Given the cultural importance of the forest in many rural societies, commercial forestry represented (and continues to represent) a threat to economic as well as cultural survival. In the circumstances, social opposition to its workings has had to invoke an alternate system of use as well as an alternate structure of meanings.

V

POLICY DEBATES

As the accumulated evidence clearly indicates, the impact of the century and a quarter of state forestry in India has been devastating on both environmental and social grounds. Deforestation and its byproducts are arguably India's most pressing ecological concerns. Extrapolating from recently available satellite imagery, it has been

²³ See Nos. 37-39, Internal-B Prog., Foreign Department, National Archives of India, New Delhi.

²⁴ For more illustrations and archival sources, see the papers cited in footnote 21 above.

estimated that India is losing approximately 1.3 million hectares of forest cover annually. Forests cover only 14% of the total land area, or less than 1/2 of the 33% stipulated as ecologically necessary by the Food and Agricultural Organization. 91,710 sq. km. or 2.79% of India's land has been deforested in the past decade alone. This pace of forest loss has had other serious environmental impacts - an increased incidence of floods, the rapid siltation of irrigation channels and reservoirs, and the drying up of water sources.²⁵

The social consequences of the continuing loss of woodland are no less severe. It has led to acute shortages of forest produce for the many and varied users: shortages of raw material for large industry and small artisans, of fuel and small timber for peasants, of fodder and grazing land for pastoralists, and of land for shifting cultivators and hunter gatherers. One of the most portentous and widely noticed consequences of these shortages has been their impact on the health and social role of women, who in many rural families exclusively bear the burden of fuel and fodder collection. As resources have gotten scarce, there have been increased conflicts between the different groups who exercise their often competing claims on the produce of the forest.

While the debates of the past few years have revealed a widespread consensus on the extent and consequences of Indian deforestation, they have also brought to the fore two sharply opposed sets of policy proposals. One alternative, articulated by the forest department and occasionally by industrialists sympathetic to its aims, turns on the *intensification* of current methods of forest protection and production. It identifies rural demand and an expanding human and bovine population in the countryside as the main threat to sustainable use, and continues to cling to the myth of "sustained yield" - despite the evidence that this philosophy has been honored more in the breach - that is the gospel of the international forestry profession. Proponents of this view strongly advocate the retention of state monopoly over forest land, and ask for a set of punitive sanctions fuller than those existing in the present (colonial) forest act to enable them to effectively police the forest from villagers. These recommendations were embodied in the notorious forest act of 1982 - an act finally withdrawn by the government after much adverse publicity and strong opposition by peasant organizations.²⁶

²⁵ For an admirable review and analysis of the impact of deforestation on Indian ecology and society, see Centre for Science and Environment, *India: The State of the Environment 1984-85: A Citizens Report* (New Delhi 1985).

²⁶ For the controversy surrounding the draft forest act of 1982, see V. Sonawne, K. Dhodhade, and K. Dhangde, "Forests: Statism not the Answer", EPW, 15.9.1982; Sharad Kulkarni, "Encroachment on Forests", EPW, 16.1.1982.

A radically different set of proposals, meanwhile, have been advanced by grassroots environmental groups and scientists in close touch with them. Traditional "sustained-yield" state forestry has both outlived its usefulness and outrun its course, the environmental movement is suggesting, and needs to be *completely overhauled*.²⁷ In the prevailing system of forest management, the argument runs, none of the social groups most involved with its workings have any incentive to manage forest resources sustainably. Industry is quite happy to get subsidized raw material from the government without investing one rupee in forestry; peasants, having been deprived of access and control, are alienated from the forests and rightly believe that unless they illegally fulfil their needs they won't get anything at all; and finally, as long as revenue generation and commercial usefulness is the gauge by which forest officials' performance is assessed, they don't have much incentive either. Any new system of forest resource management must therefore have an incentive structure appropriate to these contending demands and interests. In contrast to an overarching state monopoly, the new policy would rest on a combination of individual, community, corporate, and state management.²⁸

This division has surfaced most clearly in the two forest policies framed independently by different wings of the government to replace the policy of 1952.²⁹ One framed by the forest department, made negligible concessions to the criticisms of peasant organizations and ecologists. Like its predecessors, the forest policies of 1894 and 1952, it arbitrarily lists several conflicting objectives - maximization of forest productivity, fulfilment of rural and industrial needs, and ecological safeguards - without any clear priorities being assigned amongst them. In the absence of clear guidelines, and in the ambiguous attitude of this draft policy towards clearcutting, there is the very real fear that as in the past forest management would favor commercial needs in the name of the "national interest." In its continuing reluctance to involve villagers, it seems fair to say that the overriding objective of this policy seemed to be the consolidation of the monopoly currently enjoyed by the forest department. It reflects the territorial instincts of a bureaucracy unwilling to let go of any portion of the vast

²⁷ For an incisive analysis of the limits of "traditional" forestry in Third World settings, see W.R. Burch, Jr., *The Uses of Social Science in the Training of Professional Social Foresters*, mimeo, Food and Agricultural Organization, Rome, 1987.

²⁸ Cf. Madhav Gadgil, "Forestry with a Social Purpose", in W. Fernandes and S. Kulkarni, editors, *Towards a New Forest Policy* (New Delhi 1982).

²⁹ For a detailed comparison of the two policies, on which the following paragraphs are based, see Madhav Gadgil and Ramachandra Guha, "The Two Options in Forest Policy", *Times of India*, Bombay, 12 and 13 September 1984.

land mass under its control or of the substantial prerogatives that come with this ownership.³⁰

The second policy, commissioned by the Department of Environment, argues that it is time to undermine the sovereignty historically enjoyed by the Indian forestry profession. The evidence strongly indicates first, that their definition of social needs is unacceptable on grounds both of equity and environmental harmony; second, that any viable system would necessarily involve taking away some portion of the department's land empire; and finally, that foresters, contrary to their self image, do not enjoy a monopoly of technical expertise either - both the "new" science of ecology and the local and "ancient" wisdom of unlettered men and women have in some significant respects a fuller knowledge of the dynamics of forest ecosystems. In the cliched but still useful jargon of the development professional, the ecologists' policy rests on a "bottom up" rather than "top down" approach. It outlines procedures to involve villagers more fully in forest management and to ensure that industry is made to contribute substantially to the maintenance of forest cover instead of being heavily subsidized as in the past. This policy pays careful attention to ecological considerations, outlining checks on clearcutting and loss of biological diversity. Its *raison d'être* is that the democratization of forest management represents the only way out, and hence future policy and legislation should allow for the fuller participation of industry, peasants, and especially of relatively powerless groups such as women and aboriginals.

At the time of writing, the debate stands unresolved. The government has made important administrative changes, pulling the forest department out of the ministry of agriculture and clubbing it with the department of environment in a newly constituted ministry of environment and forests. It has also set up the National Wastelands Development Board, an autonomous agency outside of the forest department, which has been charged with the task of afforesting 5 million hectares a year. It is not clear whether these organizational changes are merely cosmetic or whether they signal a major shift in the style and substance of forest management. The new Board has floated two sets of proposals to enable non governmental agencies raise tree crops on land currently vested with the state; one involving the transfer of land to private industries, the other a program of granting usufructory rights to landless peasants on condition they plant trees. At the same time, the government has not decided on

³⁰ With over one fifth of India's land area vested in it, the forest department is by far the largest single landlord in India. It is therefore all the more surprising that students of modern Indian economic, social, and administrative history seem largely unaware of its existence.

accepting either of the two policies referred to above, nor that it shown any signs of fully withdrawing the draft forest act of 1982. Within itself, the state is split by the struggle of foresters and ecologists; outside, it is subject to the contending pressures of peasants and industry. The forest, as they say, is up for grabs. As in other Third World countries, the state is the most powerful actor. It enjoys a visible and ever growing presence in all spheres of social life. And while the actions of grassroots organizations and environmentalists will continue to be a factor to contend with, the ultimate resolution of the "forest question" depends as much on the internecine struggles within the state as on the outcome of conflicts within civil society.

VI CONCLUSION

Perhaps no one paradigm has exercised more influence on modern ecological thinking than Garret Hardin's "Tragedy of the Commons." The conflict between individual utility maximization and the social good, and the role of population growth in intensifying this conflict, are routinely cited as the main causes of environmental degradation in the Third World. While the empirical basis of such assumptions is unclear, what is undeniable is that the "Tragedy" model provides a powerful and compelling explanation for the social and environmental ills that afflict humanity. Western ecologists, international development agencies, Third World politicians and administrators, and (as I am discovering) graduate students setting out to reform the world all subscribe to it with a disturbingly complete unanimity.

While they can hardly be said to have breached this consensus, in recent years a growing body of anthropologists, "ethno" scientists and historians have developed a powerful critique of Hardin's "Tragedy" model and its various applications. It has been shown to be logically inconsistent, culturally rooted, and empirically false.³¹ Painstaking research has revealed the existence of enduring and complex common property systems of resource management in different cultures and historical periods. The effective functioning of these systems has rested on two features: a degree of communal solidarity unknown and incomprehensible to modern Western (especially American) man, and a level of local ecological knowledge that in many respects equals - and in some respects surpasses - codified, "scientific" knowledge.

³¹ For a fine critique, see Pauline Peters, *Embedded Systems and Rooted Models: The Grazing Lands of Botswana and the Commons Debate*, Harvard Institute of International Development, Discussion Paper No. 203, 1985. X

While acknowledging their enormous contribution to the delegitimizing of Hardin's simplistic - not to say simple minded - model, I would argue that many of these scholars make the reverse mistake of believing that "traditional" common property systems never or seldom break down. In fact, the breakdown of systems of common property resource management is very widespread today, and by no means unknown in earlier periods of history. One of the most important research and practical issues on the agenda of human ecology concerns the identification of the points at which such systems do break down. At the risk of some simplification, and in the hope of keeping the ball rolling, let me suggest that there are three possible ways in which common property resources come under threat:

1. Exogenous social change, i.e. when these resources are expropriated by a more powerful social force. Colonialism and conquest are the obvious examples. As a colonial forest official justifying the state takeover of forests put it, "the right of conquest is the strongest of all rights: it is a right against which there is no appeal."³²
2. Endogenous social change. What I have in mind here are processes of internal differentiation such that the relative balance of power within a community is significantly altered so as to seriously undermine existing networks of cooperation. Often, this goes hand in hand with the creation of a market for a product previously unsaleable (e.g. forests). Alternately, technological innovation and market demand may facilitate a change in ecological regimes from, say, forests to pasture or from fen to cropland. The enclosure movement and its assertion of the powers of superior landlords (backed by the state) constitute the paradigmatic case here.³³
3. Demographic change, i.e. a secular increase in population which by itself increases the pressure on, and conflicts around, management of a common property resource.

In the case of Indian forestry, we observe all three processes operating *simultaneously*. British rule resulted in the theft of the forests from village communities; the growth of industrial capitalism and intensification of inequalities within Indian society brought new pressures to bear on the forest; and finally, the phenomenal demographic expansion of the last century has taken its own toll. A quick look around the ecological landscape in other parts of the Third World suggests that

³² C.F. Amery, "On Forest Rights in India", in D. Brandis and A. Smythies, editors, *Report on the Proceedings of the Forest Conference Held at Simla, October 1875* (Calcutta 1876), p. 27.

³³ Cf. Karl Polanyi, *The Great Transformation* (1944; reprint Boston 1958), a study possibly flawed in its historical detail but as yet unequalled in its ecological sophistication and analytical depth.

this is by no means an isolated phenomena, confined neither to India as a geographical region or to forests as a common property resource. Representative examples would include: declining fish stocks as a consequence of competition and conflict between artisanal fishermen and large trawlers; conversion of pastureland into desert through population growth, expansion of the market, and breakdown of cooperative mechanisms between sedentary and nomadic communities; conflicts between industrial pollution and river fishermen; the takeover of village commons by market oriented landlords at the expense of relatively powerless groups within the village; the continuing assertion of state power and control over forests, water, and other resources; and so on. Depending on the resource and national context, the details would vary considerably: yet it is possible to state with some confidence that the decline of common resources in each case is the consequence of some combination of exogenous social change (conquest), endogenous social change (changes in local power relations) and human and animal population growth.

The case of Indian forest decline, therefore, is representative of a far wider spectrum of cases, in which comparable social and ecological processes are hastening the decline of common property rights and resources. While most analysts are agreed on the salience of this process, they sharply diverge on what would be its eventual outcome. The debates of the last decade or so have brought to the fore two polarized positions, briefly summarized below.

The forward looking utopians (typically economists) argue that the breakdown of common property resources is all to the good. It replicates a similar transition from common to individual and state ownership over natural resources (e.g. forests) in the West, wherein the surplus population was effectively absorbed in the growing industrial sector. The same process is repeating itself, with a lag of three centuries, in much of the "developing" world. It should be left to work itself out, but the state could help by giving free play to market forces, protecting individual property, and where necessary intervening to prevent a "Tragedy of the Commons."

The backward looking romantics (typically anthropologists) take issue with this Eurocentric and linear vision of historical development. Common property resources, they believe, are a characteristically non Western phenomenon, and the "communal" spirit they exemplify is ecologically and morally superior to Western individualism. While admitting the recent decline of community systems, they lay the blame squarely at the feet of Western colonialism and Western style development with its reliance on industrialization and the market. Their solution: take away the forests (and other natural resources) from those who have recently usurped them - i.e. the state and the

commercial sector - and vest them once again in the hands of local communities. If this is successfully done, these communities will manage resources harmoniously and recreate the Arcadian idyll that was there in the first place.

While I am personally more sympathetic to the latter interpretation, clearly both paths are unfeasible. Due to social, historical, and demographic reasons, the Third World, even if it wanted to, cannot emulate Western style industrialization. The worldwide replication of an industrial monoculture and Western consumption patterns cannot be sustained by the global ecosystem.³⁴ At the same time, it is not possible to go back either. The social and demographic profile of the Third World has changed dramatically since the advent of European colonialism, and in many cases traditional institutional and ecological mechanisms for managing the commons are fragmented beyond repair.

Even if we are all agreed on the imperatives of ecological stability and social justice, the task before the environmental community is a daunting one. While the specifics will, for some time, continue to be unclear, any viable solution would involve a synthesis of traditional, modern, and post-modern political economies, technologies, cultural systems, and ecological regimes. This holds true for common property resources as well for resources under other forms of ownership, for Third World contexts as well as for Western ones.³⁵

³⁴ This proposition is self evident, but many Western environmentalists are loth to face up to its implications. If the Third World cannot ever hope to replicate Western patterns of consumption, surely the morally correct solution would be to begin by limiting the dependence of the West on the produce of other cultures and ecosystems. (According to a recent estimate put out by Zero Population Growth, each American consumes 39 times as many resources as an Indian. See *Christian Science Monitor*, 2 March 1987). At the two ends of the Western environmental spectrum, however, the response has not been very helpful to the cause of a truly multinational environmentalism. While global managers persist in upholding the myth of continuing economic expansion, the so called "deep ecologists" go off on the deep end by ignoring human consumption and human power relations (to my mind the core of the environment debate) in favor of a "biocentric" philosophy that gives priority to the "needs" of nature.

³⁵ My thinking on human ecology in general and "social" forestry in particular has been greatly influenced by four senior colleagues: two Americans, Bill Burch and Louise Fortman, and two Indians, Anil Agarwal and Madhav Gadgil. This paper bears the mark of their published and unpublished writings as well as of our personal discussions. The usual disclaimers apply.