Selling nature to save it? Biodiversity and green developmentalism

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Abstract. New supranational environmental institutions, including the Convention on Biological Diversity (CBD) and the ‘green’ World Bank, reflect attempts to regulate international flows of ‘natural capital’ by means of an approach I call ‘green developmentalism’. These institutions are sources of eco-development dollars and of a new ‘global’ discourse, a postneoliberal environmental-economic paradigm. By the logic of this paradigm, nature is constructed as a world currency and ecosystems are recoded as warehouses of genetic resources for biotechnology industries. Nature would earn its own right to survive through international trade in ecosystem services and permits to pollute, access to tourism and research sites, and exports of timber, minerals, and intellectual property rights to traditional crop varieties and shamans’ recipes. I contend that green developmentalism, with its promise of market solutions to environmental problems, is blunting the North–South disputes that have embroiled international environmental institutions. But by valuing local nature in relation to international markets—denominating diversity in dollars, euros, or yen—green developmentalism abstracts nature from its spatial and social contexts and reinforces the claims of global elites to the greatest share of the earth’s biomass and all it contains. Meanwhile, the CBD has become a gathering ground for transnational coalitions of indigenous, peasant, and NGO opponents of ‘biopiracy’ and the patenting of living things, and advocates of international environmental justice. They have begun to put forward counterdiscourses and alternative practices to those of green developmentalism.

The 1990s have seen the establishment of supranational institutions designed to regulate international ‘environmental investments’ and the transboundary flows of natural resources, including genetic information and knowledge about nature. These structures of eco-economic governance include environmental treaties, especially the Framework Convention on Climate Change (FCCC), the Convention on Biological Diversity (CBD), and the Global Environment Facility (GEF), among others. These new multilateral institutions work closely with the World Bank, United Nations agencies that have taken up green agendas, and mainstream conservationist organizations, many of which now claim ‘global’ mandates.

At the core of the rationale for these transnational green institutions is the claim that ‘humanity’ has a common interest in mitigating planetary ecological degradation, and the premise that ‘global’ environmental problems can be managed without confronting the disastrous environmental and equity consequences of current economic trajectories (CBD, 1992, preamble; FCCC, 1992, preamble, article 4; GEF, 1996, pages 3–7).

The power struggles and contestations of meanings that embroil international environmental institutions belie these presumptions. I shall argue that they demonstrate, instead, that attempts at ‘global’ environmental regulation are reanimating longstanding tensions about international wealth and power gaps and about the means to—and the meaning of—development.

The new international environmental institutions are sites for the production of ‘global’ environmental discourse. The dominant voice in this discourse is a postneoliberal version of environmental economics, applied on a world scale. It recasts the popular
environmentalist account of the spoiling of Eden by industrialism run amok into a parable of policy failures correctable by market solutions. The key to those market solutions, the story goes, is the privatization and commoditization of nearly every aspect of nature, from molecules to mountainscapes, from human tissues to the earth's atmosphere. This global environmental-economic paradigm reduces organisms and ecosystems to their allegedly fungible components, and assigns monetary prices, calculated with reference to actual or hypothetical markets, to those components. The result is a panplanetary metric for valuing and prioritizing natural resources and managing their international exchange. This method for measuring the worth of living things provides a framework for implementing the triple mandate of the CBD: (1) the conservation of biological diversity; (2) the sustainable use of biological diversity; and (3) the 'equitable sharing' of the benefits of genetic resources.

Further, this approach to the pricing of life offers to nature the opportunity to earn its own right to survive in a world market economy. Conservation projects are to be financed by exports of environmental assets: the sale of access to ecotourism sites, the trade of rights to use ecological services (such as air pollution credits), and the export of intellectual property rights to medicinal plants, shaman's recipes, traditional crop varieties, and the genetic information they contain (see, for example, Vogel, 1994). Such schemes have obvious appeal to policymakers charged with combining fiscal austerity with environmental gains.

By promoting commoditization as the key both to conservation and to the 'equitable sharing' of the benefits of nature, the global environmental-economic paradigm enlists environmentalism in the service of the worldwide expansion of capitalism. It helps to legitimate and speed the extension of market relations into diverse and complex eco-social systems, with material and cultural outcomes that do more to diminish than to conserve diversity and sustainability.

However, the new international environmental institutions are also providing political space for local—transnational alliances of peasant and indigenous peoples' movements with radical nongovernment organizations and other opponents of 'biopiracy' and the commoditization of life. The counterdiscourses and concrete demands of these alliances pose profound challenges to the ideology, institutional arrangements, and practices of 'global' environmental management and market-based 'solutions' to ecological crises.

**Green developmentalism**

Contrary to neoclassical mythology, markets in nature—or in anything else—are not natural: they have to be created and regulated. Most importantly, according to the environmental-economic paradigm, markets in nature and knowledge about nature require the strengthening of property rights, including intellectual property rights (IPR). They also depend upon methods for quantifying the values of nature, policies to insure that environmental costs and benefits are taken into account, and structures to manage the efficient use and exchange of 'natural capital'. My name for this mutually constituted complex of institutions, discourses, and practices is 'green developmentalism'. Green developmentalism reflects efforts by relatively far-sighted capitalist actors to overcome barriers to accumulation caused by toxic build-up, unstable climate, urban congestion, impaired worker health, degraded soil (O'Connor, 1988), as well as the dangers of the loss of biological diversity: genetic erosion and the increased vulnerability of monocrop agriculture to pests and diseases.

Green developmentalist reforms attempt to rationalize industrial and agricultural practices and cost accounting to limit ecological damage and reduce waste, to the degree that this can be done without reducing profits; in other words, so long as 'pollution prevention pays'. But, principally, green developmentalism tries to cope
with environmental degradation by socializing the costs of toxic pollution and resource depletion. Its advocates call for a variety of funds, tax breaks, and other incentives by means of which consumers, communities, and states subsidize the costs to private firms of introducing greener technologies and conserving biodiversity (McNeeley, 1998; OECD, 1996; Pearce, 1995; Ringwold et al., 1998; World Bank, 1993; 1997a).

In this paper I describe the green developmentalist bid, brokered by the new transnational environmental institutions, to socialize environmental costs 'globally'. In essence, this involves shifting even more of the burden of ecological crisis onto the inhabitants of the formerly colonized world, to countries that are cash-poor, but that are also—according to the logic of neoliberal environmental economics—"underpolluted" (Summers, cited in Martinez-Alier, 1995) and overendowed with natural wealth because they cannot afford to or do not know how to 'develop' that natural wealth.

Prominent actors in the promotion of a global green developmentalist agenda include the World Bank's Environment Department, OECD patent offices and representatives to international environmental negotiations, the quasigovernmental World Intellectual Property Organization and World Conservation Union, and corporate lobbying bodies such as the US Biotechnology Industry Organization. Green developmentalism has growing support among mainstream conservationist organizations such as the World Resources Institute and the Worldwide Fund for Nature (Freese and Curtis, 1998; IUCN, 1998, Reid et al., 1993; Sheng, 1995), and among academic scientists and environmental policymakers (Heywood and Watson, 1995).

Green developmentalism attempts to maintain a separation between environmental problems and broader political-economic issues. It promotes a bias toward technological solutions and away from social-structural change. It provides justification for the continued conceptualization of environmental goals in isolation from development aims and without changes in existing political institutions, distributions of economic power, and patterns of resource flows. By providing a rationalization for the pursuit of green goals without reversal of the long-term net transfer of financial and material resources from the global 'South' to the 'North' and from rural to urban areas nearly everywhere, green developmentalism reinforces environmental injustice on a world scale.

If it is true, as advocates of green developmentalism contend, that the conservation and use of biodiversity can be managed primarily by market means, then the existence of gross economic and power inequalities—North–South, urban–rural, landed–landless— and disputes over the limits of state sovereignty become irrelevant to the task of international environmental management. In this way, challenges by environmentalist NGOs and new social movements to economic expansion along current trajectories can be contained, or at least discursively neutralized.

In this paper I illustrate the interplay of three forms of power—discursive power, institutional power, and economic power—in green developmentalist attempts to restructure international resource flows to cope with environmental crises. Specifically, I refer to the discursive power of the post-neoliberal environmental-economic paradigm, the institutional power of the World Bank and multilateral environmental institutions, and the economic power of the advanced capitalist states and transnational corporations. I discuss the interplay of these three forms of power in the construction of biological diversity as an internationally tradable commodity and the control of its accumulation and exchange.

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(1) I describe the global environmental-economic paradigm as post-neoliberal because, unlike neoliberal political economy, it tries to incorporate economy–environment interactions and because it acknowledges that markets in environmental assets do require planning and institutional intervention [see, for example, Vogel (1994)].
First, I summarize the assumptions of the 'global' environmental-economic paradigm. I then describe the conflicted construction of the CBD. I argue that discursive, institutional, and economic power are being mobilized to contain challenges to the international political-economic status quo and to marginalize those countries and social movements that insist on pursuing subversive interpretations of the treaty. Last, I note briefly how green developmentalist power plays are being resisted in the CBD and other international fora, and how the CBD has become a staging ground for new transnational alliances.\(^{(2)}\)

**The World Bank: Managing natural capital**

At the heart of the global environmental-economic paradigm is the neoclassical ideal of the world as a vast marketplace, in which all human–nature interactions, as well as all social interactions, can be understood as market-type exchanges, the cumulative effect of which is the most efficient possible use of all goods, services, information, and natural resources. Optimal environmental outcomes depend on recognition of the 'real prices' of natural resources and their translation into monetary terms, taking into account long-term ecological effects, and the internalization of environmental externalities (Pearce, 1995; Perrings, 1995; see also Jacobs, 1991). This requires institutions such as multilateral agreements and national environmental agencies, and the World Bank's expertise so that the prices of nature's components can be discovered, property rights to them defined and enforced, and perfect-as-possible markets established.

The World Bank is working on several fronts to position itself as the world's most expert and objective manager of transnational environmental resource flows and to co-opt environment-related challenges to modernizing development (Serageldin, 1995). The Bank's Environment Department nurtures a growth-friendly, green developmentalist version of environmental economics (Pearce and Warford, 1993; The World Bank, 1994; 1995; 1996; 1997a; 1997b). It contends through its treatises that not only is continued economic growth without fundamental restrictions or redistribution desirable—but also, that 'sustainability' itself depends on it. Only a pro-growth climate, they argue, will provide the profit incentives needed to spur technological advances that will enable the world economy to continue growing and getting greener at the same time: a neat circle of reasoning that begins and ends with growth.

Once the values of natural resources are made known and market distortions created by state subsidies are removed, states the theory, environmental assets will be exchanged for their actual prices, with environmentally beneficial results (Munasinghe and Cruz, 1995). For example, if states stop giving away irrigation water, less will be wasted. If water is sold at prices that reflect its biophysical as well as its economic costs, the market will—naturally, in this world view—allocate it in the most efficient way. Similarly, Bank analysts reason, if Southern states cease subsidizing food crop prices and fuel, fertilizer, and pesticide inputs, farmers will be forced either to use those substances more efficiently or to go out of business. This theory ignores the likelihood that most of those forced out of farming by subsidy cuts are likely to be

\(^{(2)}\) To an extent, my concept of green developmentalism parallels the interpretation of 'ecological modernization' advanced by Maarten Hajer, who applies Foucauldian discourse analysis and the risk society thesis of Ulrich Beck to environmental policy processes in Europe (Hajer, 1995). Both concepts refer to discursive-institutional constructs that attempt to resolve environmental conflicts without major alterations in existing political and economic institutions, in the context of economic growth and profit-making, by means of environmental cost–benefit calculations, and under the influence of what Hajer calls 'sub-political' processes. However, Hajer ascribes to the realm of discursive-institutional processes more independence from imperatives of organized capital than do I, and is more sanguine about the prospects of creating adequately 'reflexive' new institutional arrangements by means of democratic deliberations and the deconstruction of scientific-technical authority.
small-scale local producers, and that in many places, it is these farmers who employ more diversity-based and ecologically sound farming methods.

The production of replicable formulae for environmental accounting and policy reform gives Bank personnel trained in managing markets something green to do, and gives the Bank—always needing to drum up demand for its products—new sorts of loans to sell. The purchase of loans to build ‘environmental capacity’ often turns out to be one of the green conditionalities required if countries seeking other forms of financial support from the Bank and its co-members of Northern lender and donor cartels.(3)

In all this can be seen the confluence and mutual reinforcement of economic, institutional, and discursive forms of power. The Bank’s institutional power enables it to create and impose standardized eco-economic formulae, along with bureaucratic mini-replications of itself inside Southern states, set up to implement the Bank’s policy prescriptions. This institutional power is backed by the Bank’s own economic power to lend or not lend, and by the more substantial economic power of advanced capitalist states and private transnational firms and financiers. (These, in turn, look to the Bank and to the IMF to guarantee their own private investments by means of Bank co-financed infrastructure projects, policy reforms required by the Bank and the IMF Multilateral Investment Guarantee Agency, IFC and (MIGA) financing and insurance, and IMF financial bail-outs.) Together, these forms of power help to create and reinforce the Bank’s discursive power to construct commoditized nature as a component of the mythical market-world.

Nature as constructed by the Bank’s green developmentalism is nature of a very particular type: an abstract, ‘globalized’ resource, torn out of its spatial and social-historical contexts.(4) Such a conceptualization is well suited to the Bank’s institutional ambitions and its new, corporate-modeled incentive structure. If Bank researchers can come up with universal formulae applicable at multiple scales, and with methods for calculating the value of any ecosystem and the components of its diversity, they can then devise general policies and fundable projects to ‘develop’ those ecosystems most ‘efficiently’. This calls for tapping Bank expertise, and adds to the Bank’s bulging ‘Biodiversity Investment Portfolio’ at a time when the institution, and its environmental divisions in particular, are struggling for funds and a raison d’être.

A more grounded approach would recognize that centers of biological diversity are unique, and that most ecosystems are irreducibly complex, composed of an incalculable variety of interspecies dependencies. Moreover, ecosystems are often linked in immensely varied and always location-specific ways to diverse human communities. People have acted for centuries to conserve, alter, reduce, and help create biological diversity. Many are still doing so by means of agricultural and cultural practices that often bear little resemblance to measurable, benefit-maximizing exchanges between atomized agents.

But if the environmental knowledge produced by the Bank were to stress the complexity and social contextuality of biodiversity, then the institution’s purported comparative advantage, based upon its size, centralization, and market-economics

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(3) A typical package of green conditionalities may include requirements for participation in international environmental agreements, preparation of national environmental plans and policy reforms generally modeled on those of Europe and the United States, actions to increase the prices of—and/or state revenues from—natural resources such as water and timber trees, the designation of protected areas, and the establishment of state agencies to set pollution standards, to sign off on environmental impact assessments, and to hire World Bank or Bank-approved experts and receive Bank green loans.

(4) Common to the critiques of abstract nature-as-commodity by Martinez-Alier (1987; 1995), Altvater (1993), and O’Connor (1994) is the insistence on situating nature in time [bioevolutionary time and cosmological time (in relation to the laws of thermodynamics), and in social time (human history)] as well as in geographical space (biophysical locality and social positionality).
expertise, would be turned into its opposite. The Bank would have to acknowledge that ‘sustainable use’ projects must be as diverse as the ecosystems they are meant to conserve, and that their success depends crucially on the fates of local societies and on detailed, site-specific environmental knowledge, both ‘Western’ scientific and ‘traditional’. Most importantly, the Bank would have to concede that environmental valuation is both culturally specific and profoundly shaped by power relations, as the following section argues.

The globalization of environmental injustice

Green developmentalist theory, even before it is applied to the design of eco-development projects, already contains a bias with regard to the distribution of natural wealth and access to nature and its benefits. By interpreting the values of nature in relation to the international markets; that is, by denominating diversity in dollars, or euros, or special drawing rights, the global environmental-economic paradigm justifies the claims of those with the greatest purchasing power worldwide to the greatest share of the earth’s biomass and all that it contains.

For example, green developmentalist discourse has recently begun to recognize the potential ‘global benefits’ of indigenous knowledge about nature and of traditional agricultural practices. But so long as those insights and practices remain noncommoditized, or commercialized only in local markets, they have no ‘global’ economic significance. It is only when they are brought into international commodity circuits that their values can be realized. Thus, the only values that count are the values of those knowledges and practices to people other than those who now have them and use them.

The trait shared by most ‘indigenous and local communities’—to adopt the phrase used in the CBD text—is that their economically productive activities take place at least partially outside the international market economy. At least to some degree their cultural practices, including the ways they interact with their natural environments, reflect this fact. This, after all, is why their ‘traditional lifestyles’ are of interest to defenders of biological diversity more broadly. Farmers who produce at least a portion of their crops for subsistence or exchange in local markets are more likely to maintain a genetically diverse spectrum of plant species and varieties because it is more affordable and less risky to do so. They are able to follow these ecologically and economically rational practices because their decisions about what to plant and how to farm are not dictated by the global market through the demands of creditors and agricultural extension agents who require the use of particular technological packages or the demands of buyers who demand uniform harvests (Altieri and Hecht, 1990; Posey, 1985). Similarly, even if they fail to embody the neopopulist ideal of ‘harmony with nature’, people who depend on forests and waters as sources of livelihoods tend to know a great deal about the ecosystems from which they harvest and to have a direct stake in their preservation.

Some of these ecosystems, and knowledge about them, may also happen to be of great value to conservationists, researchers, governments hoping to tap them as sources of revenue, biodiversity prospectors, or miners or loggers looking for marketable commodities. Can the worth of these ecosystems be quantified, and the results used to balance the interests of these various bidders and to determine the ‘fair and equitable’ rate at which local communities might be compensated for the loss of the ecosystems they now depend upon? The World Bank applies ‘global’ environmental-economics to do precisely this.

Cases highlighted by the Bank’s Environment Department compare the average annual incomes of people who now use particular ecosystems for their subsistence with the dollar amounts that might be raised if those same resources were sold on
international markets. For example, as foreign ecotourists are willing to spend more in a day to visit a patch of savanna in, say, Botswana than a herder there earns in a year, the most efficient way to ‘develop’ that ecosystem would be to set up a tourism enterprise and employ the former pastoralists as eco-safari guides. (In spite of the Bank’s professed interest in ‘social capital’, the cultural significance of pastoralism does not yet figure in such calculations.) Similarly, reason the Bank’s environmental economists if a tropical forest is logged, or set aside as a protected area from which people are excluded, the farmer-gatherers who once practiced shifting cultivation in that forest might be justly compensated by an annual handout of rice worth as much in dollars as the harvests they used to produce, plus a bit more to take account of what the swidden agriculturalists might have earned had they opted to sell some of the trees (Munasinghe, 1993).

These examples illustrate that if the international distribution of ‘biodiversity benefits’ is determined by the market then the world’s economic elites will continue to receive the overwhelming share. Particular countries (mainly in the North) and particular classes (North and South) have long been consuming a disproportionate share of the earth’s natural wealth, accruing an immense ‘ecological debt’ to the regions and peoples whose resources they have consumed (Martinez-Alier, 1995). To compensate local and indigenous communities for their resources with sums determined by international market prices can only add to that debt.

‘Global’ purchasing power reflects the structural inequalities and disarticulations between industrialized and primary commodity-based economies, and between commercialized and subsistence or partial-subsistence sectors within regions. In a world where capital is increasingly mobile and labor migration constrained, the ascribed value of any given resource, if used by the relatively ‘developed’ countries or social sectors, will always outweigh alternative uses of the same resource by poorer countries and communities, whose bids cannot compete with those of the rich.

Moreover, the various meanings and ‘values’ of nature—subistence values, exchange values on local and regional markets, and symbolic values—are specific to each eco-social system, at least until they are supplanted by commodity relations. Even then, citizens of the global North, as well as many ‘traditional’ peoples, may place high values on the aesthetic or spiritual aspects of nature, but those values cannot be captured, much less compared, in monetary terms. It is simply not meaningful to weigh the amount that a professional earning US $60,000 a year is ‘willing to pay’ for the continued existence of a tropical ecosystem against the ‘willingness to accept compensation’ for the loss of his or her ancestral homeland of a resident of that same ecosystem who has little or no cash income, and a vastly different world view. (5)

Contrary to the premise of the global economic paradigm, there can be no universal metric for comparing and exchanging the ‘real values’ of nature among different groups of people from different cultures and with vastly different degrees of political and economic power. Nor is there any way to place a price—even one that includes aesthetic, option, existence, and even spiritual values—on any element of biological diversity torn out of its social and ecological context.

(5) The debate over whether and how environmental economists ought to measure noninstrumental and nonanthropocentric values, such as the worth of a plant unseen by and of no apparent use to humans, will not be settled soon. Nevertheless, there are environmental economists diligently working to refine methods for the economic accounting of aesthetic, existence, and even spiritual values of nature (see Perring, 1995).
The Convention on Biological Diversity and the uses of green developmentalism

The origins and structure of the CBD

The Convention on Biological Diversity was launched at the 1992 UN Conference on Environment and Development ‘Earth Summit’ in Rio de Janeiro. By May 1998 the treaty had been ratified by 172 states, not including the USA. The original text was a broadly worded compromise, mainly between on the one hand advanced capitalist states, mainstream environmental lobbies, and transnational biotechnology and agrochemical industries, and on the other hand Southern states and radical-populist NGOs.

Ongoing disputes in the CBD highlight the persistence of ‘North – South’ conflicts over the control of financial and natural resources, issues that today are excluded from other international fora by hegemonic neoliberalism. Conflicts in the CBD also reflect divergent conceptions of environmental problems and of the meaning and value of nature. The superior economic and institutional power of Northern parties and Northern-based NGOs leverages the discursive power of their constructions of the problems at stake.

Many of the CBD’s original provisions are vague and even contradictory. Although the CBD, as a multilateral agreement, has limited enforceability, its stipulations influence the programs of bilateral and multilateral aid agencies and the terms of environmental discourse more broadly. The Conferences of the Parties to the CBD, where country delegations and NGOs convene every 12 – 18 months to haggle over how to interpret its provisions, provide an important arena for international coalition-building and consolidation of positions. Since 1992 differences among Southern states and between Southern governments and NGOs have grown sharper as more of the former have bought into green developmentalist formulae for biodiversity ‘benefit sharing’.

As the CBD is a UN institution [under the auspices of the United Nations Environment Program, (UNEP)], its decisions are taken on a one-country, one-vote principle. However, Northern nations provide most of the limited funds for implementation of CBD decisions through their own bilateral aid programs and via the GEF. The GEF, established in 1990 at the initiative of Western European governments and the World Bank, has been designated the interim funding mechanism for the CBD, and is housed in the Bank’s Washington complex.

In addition to their economic power, the OECD states and the World Bank exercise substantial institutional power by employing their own environmental experts, lawyers, and academic consultants. Although not a party to the treaty, the United States marshals large delegations to the CBD Conferences. Southern countries with few institutional and economic resources may send a single representative, if any, to negotiating sessions. Mainstream international environmental organizations, especially the International Union for the Conservation of Nature, have played a substantial role in shaping the CBD text and subsequent Conference of the Parties decisions. A broad range of NGOs and private-sector organizations have more limited input into the Conferences of the Parties.

The biodiversity battlefront

Although the new multilateral environmental institutions have been justified by claims about common interests in solving ‘global’ environmental problems (Taylor and Buttel, 1992), the agenda of their primary sponsors is more narrow. The main goals of Northern states in signing the CBD were:

to limit the expansion of polluting industrialization in the global South, particularly increased emissions of CO₂ and other gasses that contribute to global warming;

to preserve some tropical forests as carbon sinks;
to slow the rate of species extinctions;

to guarantee continued Northern access to Southern ecosystems and resources as
sources of primary commodities and of 'genetic resources' for their own agrochemical,
pharmaceutical, and other biotechnology industries.

The carrots offered to entice Southern states to join the Convention were the
promise of new eco-development money, the explicit recognition that states have the
sovereign right to determine access to genetic resources in their territories (CBD, 1992,
Article 3), and the vague promises that cutting-edge Northern biotechnology might
be provided to developing and 'transitional' economies on concessional terms (CBD,
1994, Article 16) and that all parties to the treaty would receive their "fair and
equitable" share of the "benefits of biodiversity" (CBD, 1994, Articles 1, 15, and 19).

The immediate goal of most Southern government signatories was to obtain addi-
tional foreign aid in the context of shrinking overall assistance, and in some cases to
please domestic conservationists and rural social movements that increasingly pose
their demands in environmentalist terms (Collinson, 1996; Escobar and Alvarez,
1995; Varese, 1996). In recent years, many diversity-rich countries have also been
motivated by hopes for new revenue from the export of their genetic 'green gold'.

The agenda of the original sponsors of the CBD and the GEF was definitely not to
question the contributions to environmental crises of existing international political
structures, development models, or present international and national distributions of
resources. These contentious issues, however, are proving to be inseparable from the
'environmental' goals of the dominant state and multilateral sponsors of these institu-
tions. The most conspicuous conflicts in the CBD have been North–South battles
between the OECD and the G77/China blocs of nations, and between the latter and
the World Bank (UNDP et al, 1994). The G77 group has refused to accept formal
designation of GEF as the Convention's permanent funding mechanism because, they
assert, the GEF is an instrument of the Northern-dominated World Bank. In this
case, although not only for this reason, Northern states have failed to make good
their Earth Summit promise to provide 'new and additional' resources for biodiversity
conservation in developing and postsocialist countries (Lake, 1997). These same
states nevertheless insist that aid-recipient states meet the green conditionalities they
often attach to the limited aid that they do offer.

At the same time, the CBD has opened a discursive space for organizations of civil
society, including oppositional social movements and their international coalitions. It is
they, more than the mainstream environmentalists or Southern states, who have
insisted on the links between conservation and equity goals and between biological
and cultural diversity, questions much more far-reaching than those intended for
negotiation by the original proponents of the Convention.

Green developmentalism and the taming of the CBD

Green developmentalist constructions of the CBD and GEF mandates have enhanced
the control by 'Northern' and procapitalist interests over the money and the meanings

(6) The GEF itself has been mired in its own North–South disputes and in competition among
the World Bank and the two UN agencies designated to implement its projects, UNEP and the
UN Development Program.

(7) Funds promised for the GEF's first three-year, post-pilot-phase period of operation (1994–97)
totaled only US$2 billion, a meagre sum in comparison to the approximately US$20 million
average annual lending in recent years by the World Bank. As of July 1997, the GEF had
committed $733 million to its pilot phase projects and $861 million for its phase 1 projects. The
$334 million it had committed (not all of which had yet actually been spent) for biodiversity
projects represented 40% of total bilateral and multilateral aid for biodiversity conservation and
use (GEF, 1997).
fought over in both institutions. This is manifest in the bias built into the notion of 'global environmental benefits' and the criteria for environmental funding derived from that notion. Northern delegates to pre-Earth Summit negotiations made it clear that their governments would provide funds to address only those transborder environmental problems that are 'global' in nature (Fairman, 1996; Jordan, 1995). In effect, 'global environmental benefits' were defined to mean benefits to the citizens and enterprises of the already-industrialized world. This has been a bitter bone of contention among national delegations to the GEF governing council. From the beginning, the GEF treated certain categories of problems, such as tropical deforestation and marine pollution, as 'global', 'environmental', 'urgent', and therefore amenable to international action and appropriate for GEF funding (GEF, 1995; Gupta, 1995). GEF guidelines allowed other problems, such as the polluting activities of transnational firms, or soil-depleting agricultural practices, to be defined as 'political' or 'local' and therefore outside the scope of GEF action.

The GEF's four official program areas are biodiversity conservation, global warming, ozone depletion, and international waters. Southern states have argued that these categories prioritize Northern concerns at the expense of more pressing Southern environmental problems, particularly land desertification, which was originally deemed a 'local' problem by the GEF. They have managed to get the GEF to add the theme of land degradation, but only as a subcategory of the main GEF programmatic areas.

Moreover, both the CBD text (CBD, 1992) and the Instrument defining the structure and purpose of the GEF (GEF, 1994) specify that developed countries shall provide financial resources to cover the 'incremental cost' of carrying out the goals of the CBD and the Framework Convention on Climate Change. 'Incremental costs' are defined as those costs entailed when aid-recipient countries take environmental actions that provide so-called global benefits. Funding for environmental activities that benefit only the citizens and ecologies of the would-be developing states that undertake them are not to be paid for with GEF money. The incremental cost criterion accepts and reinforces existing inequalities between the North and much of the South, and within nations, in access to the benefits of 'development'.

For example, the earth's atmosphere is the quintessential 'global resource'. Although it appears to be a planetary public good, from the use of which no one can be excluded, industrialized countries have already appropriated most of its 'benefits' by saturating the atmosphere beyond the limit of sustainability with ozone-depleting chemicals and greenhouse gases (GHGs). Projects by an industrializing country state or private enterprise to reduce greenhouse gas emissions by using energy-efficient light bulbs, or to increase GHG-absorbing vegetation cover, are eligible for GEF grants because the benefits such projects provide have been defined as 'global'. However, projects by the same states or firms to reduce particulate pollutants or other emissions that do not circulate outside the country's borders, no matter how cost-effective in terms of air quality and health improvements, are not eligible for GEF funds because they yield only 'local' benefits.

Nature as a global currency
By excluding historical and spatial inequalities from its field of vision, green developmentalism offers a framework for putting price tags on the vast and various 'benefits

(8) Proposed accords under the Framework Convention on Climate Change would enable them, with minor restrictions, to continue their polluting practices in accordance with the present, grossly disproportionate world pattern. This is particularly true of US calls for a market 'solution' that would make clean air into a transnationally tradable commodity. The US proposal for an international market in pollution reduction 'credits' would enable wealthier nations and firms to buy their way out of any responsibility to reduce substantially their GHG emissions, while limiting increases in total worldwide releases of GHGs.
of biodiversity', the allocation of which the CBD is charged with regulating. If environmental economists can propose answers to the question 'How much is this or that element of biodiversity worth?', or if they can agree to a method for answering it on a case-by-case basis, then they can also propose solutions to a series of disputes which have embroiled negotiators since the treaty was first broached:

   How much “new and additional” financial assistance shall developed countries provide to cash-poor, diversity-rich developing countries to support their actions on behalf of biodiversity (CBD, 1994, Article 20)?

   What portion of the actions of any developing country result in “global” benefits, which the treaty says wealthier countries must help pay for, as opposed to “nonincremental” benefits restricted to that developing country and its inhabitants (CBD, 1994, Article 20)?

   What are “fair and reasonable terms” on which countries providing “access to genetic resources” to individuals and enterprises from other countries shall be compensated for allowing this access (CBD, 1994, Article 15)?

   How much technology, at what cost, are countries or companies required to provide to source countries in exchange for taking organisms and information about them out of those countries (CBD, 1994, Article 16)?

   What other forms of compensation, such as up-front payments or contracts providing for shares of royalties from potentially patentable biological materials and information, will meet the CBD's requirement that developing countries and perhaps local communities receive an “equitable” share of the “benefits arising out of the utilization of genetic resources” (CBD, 1994, Articles 1, 15, and 19)?

   However, as noted above, green developmentalism bases the valuation of ecological assets on their potential international marketability, and thus systematically underestimates the values of nature to people whose purchasing power in the global supermarket is small or nil. Measuring the value of a country’s biological resources on the basis of their marketability, or in terms of the market costs of replacing them, is the environmentalist equivalent of measuring progress toward development strictly in terms of gross domestic product, which neglects the effects of the distribution of that product and ignoring the nonmonetized goods, activities, and relationships that contribute to well-being and to the physical and social reproduction of life. But once it has become the basis of diplomatic horse trading and of performance indicators for the design of eco-development projects and the sale of green loans, the power of the environmental-economic paradigm is multiplied.

   This is exactly what has occurred in the CBD. Along with the notion of biodiversity itself, four problematic concepts have become pivotal in the interpretation of the treaty: global environmental problems, genetic resources, biodiversity benefits, and intellectual property rights. This set of interrelated concepts has been constructed in such a way as to link any gains to diversity-rich, cash-poor countries resulting from their participation in the CBD to their acceptance of the further privatization and commercialization of organisms, ecosystems, and knowledge about nature.

   CBD benefit-sharing provisions refer specifically to “benefits arising out of the utilization of genetic resources” (1994, Article 1), “benefits arising from the commercial and other utilization of genetic resources” [Article 15(7)] and “benefits arising from

(9) Further, by conceptualizing nature as an internationally tradable commodity—along with goods, services, labor power, and information—the global economic paradigm may provide analytical tools for 'joint implementation' schemes linking the CBD with the Framework Convention on Climate Change, and for attempts to encompass international environmental goals, within the regulatory framework of, 'free trade' treaties and institutions, especially the World Trade Organization (WTO) and the 1997 Multilateral Agreement on Investment.
biotechnologies based upon *genetic resources*” [Article 19(2), my emphases]. This narrow conceptualization of biodiversity as a technological input has been reinforced by subsequent interpretative documents by CBD Secretariat consultants and staff (UNEP, 1996a; 1996b; 1997).(10)

This equation of ‘biodiversity benefits’ with ‘genetic resources’, enshrined in the CBD text, represents a discursive conquest by the shortsighted instrumentalism of the environmental-economic paradigm. It reduces biological diversity to its purported essence as a commodity, presumably separable from its complex relationships with other ‘units’ of nature, and valuable only to the extent that it is consumed. It steers emphasis toward those aspects of nature which can be removed from their local context, ‘developed’ by means of private industrial technology, and sold for a profit on international markets. This reductionism devalues the intricate ecological and social relationships in which biological diversity is embedded. It fosters a view of ecosystems as warehouses of potential commodities to meet the demands of foreign consumers rather than as the bases of local and national life: sources of material necessities and meanings, and the biophysical contexts of cultures. It de-emphasizes the numerous, incalculable ‘benefits’ of genetic variety and other aspects of nature not ‘developed’ by industrial biotechnology that people everywhere use daily and depend upon. It distracts attention from the threats to the continued existence of many of these forms of biodiversity, threats which must be understood in political-economic terms and in their locally and historically specific contexts.

Intellectual property rights and the CBD: dubious dividends.

Before ‘biodiversity benefits’ can be commoditized and traded, they must be privatized or their ownership must be clarified. Intellectual property rights to genetic information is the conceptual cornerstone of proposals for the allocation of ‘biodiversity benefits’ under the CBD.(11) Convention provisions which would reward suppliers of genetic resources with biotechnology from advanced industrial nations are based on the dubious presumption that technology developed by and for developed countries’ industries is what Southern economies need. In any case, access to finance and technological benefits has been made contingent upon the willingness of CBD member-states to enforce the intellectual property claims of foreign commercial interests. It is the quid pro quo offered to secure their support in the marketing of the patented products of transnational agrochemical and pharmaceutical firms in their countries.

Some countries and NGOs first interpreted the CBD’s ‘equitable share’ language to mean that gene source countries or communities would finally receive some compensation for the use of biological samples taken from their territories and used to develop profitable seed lines and other commodities. This centuries-old trend accelerated with the development and promotion of high-yielding, resource-intensive green revolution crop varieties, and more recently with the application of genetic engineering to agriculture and the increased economic importance of transgenic and other patented plant varieties and linked agrotechnology packages sold in developing countries.(12)

(10) The one place where the treaty itself does not explicitly link benefit sharing with genetic resources is Article 8(j), which calls for “the equitable sharing of the benefits arising from the utilization of [the] knowledge, innovations and practices” of “communities embodying traditional lifestyles”.


(12) International access to and exchange of biological resources, had, until the 1980s, for the most part been governed by the implicit principle now referred to as ‘common heritage’, under which genetic resources were treated by seed companies, botanic gardens, and other foreign collectors as open-access resources, free for the taking (Kloppenburg, 1988).
During the 1980s, Southern states had sought international recognition of their rights to produce and market useful plants and medicines, including those based on processes or products patented in other countries. Under pressure from some diversity-rich Southern States, the UN Food and Agricultural Organization adopted the International Undertaking on Plant Genetic Resources, which declared all plant genetic resources to be the ‘common heritage’ of humankind (Brush, 1996; McDougall and Hall, 1995). This meant that farmers or enterprises ought not to be blocked by patents or other proprietary plant variety claims from reproducing or selling hybrid or genetically modified plants or seeds.

This interpretation, however, has been vigorously resisted by industrial country states and transnational seed and agrochemical firms (Fliitner, forthcoming). Negotiations to establish the CBD provided biotechnology TNCs with another opportunity to assert their privatization claims. Under pressure from biomedical and agrochemical firms, some industrialized countries, especially the USA, the United Kingdom, and Japan, were adamant that any provision to provide new technology to less industrialized countries had to be made contingent upon “the adequate and effective protection of intellectual property rights”, including patents (CBD, 1994, Article 16, paragraphs 2 and 3). They were also successful in excluding from the jurisdiction of the CBD the collections of germ plasm removed from source countries before the entry into effect of the CBD on 28 December 1993 [CBD, 1994, Article 15(3)].

The United States had been an early supporter of proposals for a conservation treaty, which it expected would strengthen US claims of access rights to agricultural genetic resources. Nevertheless, the US Bush administration refused to sign the biodiversity accord at Rio. Its reported grounds for refusal were that the IPR references in the final text were not strong enough to outlaw possible challenges to the patent-protected marketing of seed, drug, and other US biotechnology industry products in developing countries (McConnell, 1996; Schultz, 1995). The administration, in close consultation with US corporate biotechnology lobbyists, was also said to be fearful that the benefit-sharing provisions of CBD Article 19 might be used to advance “an excessive benefit and technology transfer agenda” (Blaustein, 1996).

Upon taking office six months later, the US Clinton administration convened a review of the CBD text by representatives of three US biotechnology companies and three mainstream conservationist organizations. The group concurred that the CBD’s IPR provisions were, after all, adequate. Their report was supplemented by a “Message from the President” to the US Senate, which is responsible for US ratification of international treaties (Blaustein, 1996). The message stressed that the technology access provisions of CBD Article 16 are consistent with US IPR law, and that the US government interprets the treaty to mean that any benefit sharing must not impinge upon “exclusive rights to technology that a Party may possess, and that transfers of proprietary technology will occur only at the discretion of the ... owners of the technology” (cited in Blaustein, 1996). It further stated that such transfer “requires an economic infrastructure in the recipient country that encourages the voluntary transfer of technology and sufficient safeguards for investment.”

Such an interpretation makes any potential ‘benefit sharing’ by the USA subordinate to the goodwill or profit opportunities of US biotechnology firms and contingent

(13) They have already won revision of the Undertaking in favor of recognition of private plant breeders’ rights, and are pressing for extension and enforcement through the GATT/WTO framework of their biotechnology IPR and plant breeders’ rights claims. These ‘seed wars’ and the battle over Farmers’ Rights continues in the FAO, and will erupt again in 1999 when the WTO TRIPS agreement is scheduled for reconsideration.
upon—at a minimum—adoption of IPR regimes consistent with TRIPS Article 27, and preferably also membership in the revised International Convention for the Protection of New Varieties of Plants, known by its French acronym, UPOV, which protects plant breeders’ proprietary claims, and perhaps even to further policy changes to ‘safeguard’ US investments. In effect, the USA defines ‘fair and equitable’ benefit sharing to mean some type of market-based determination of bio-resource and biotechnology distribution that would prevail even without the CBD. This would make meaningless the stated commitments by wealthier nations to benefit sharing under the CBD.

Although the US biotechnology industry now generally favors US membership in the CBD, the US Senate has yet to ratify the treaty. Influential conservative members of the US, whose power increased after the 1994 Congressional elections, have blocked a Senate vote on the Convention, along with dozens of other international treaties, on the grounds that they infringe on US sovereignty. The Clinton–Gore administration has chosen not to spend any of its scarce political capital on a confrontation with the rightist head of the Senate Foreign Relations Committee, Jesse Helms.

Genetic gold: tropical miracle crop?
The use of IPR as the framework through which genetic resource providers are to seek ‘biodiversity benefits’ is further fostered by proposals such as the Biotrade Initiative, a clearing house to link developing-country governments with private-sector biodiversity prospectors, sponsored by the UN Conference on Trade and Development (UNCTAD) and endorsed by the CBD Secretariat (Artuso and De Castro, 1996; McAfee, 1997). In the context of shrinking foreign aid, stagnant prices for other tropical resource exports, and continued pressure to make daunting debt payments, selling ‘genetic gold’ to foreign firms appears as one of the few new options for earning internationally negotiable currency.14

Advocates of the Biotrade Initiative (Artuso and De Castro, 1996) and similar projects argue that any price that cash-poor countries can now charge for genetic resources is better than none, and that Southern states and diversity-rich communities should move quickly to claim their own property rights to local genetic resources and knowledge in order to negotiate more favorable deals with bioprospectors, research institutes, and TNCs. But can the tactic of ‘selling nature to save it’, in this case using the proceeds of bioprospecting deals to finance ecological and cultural conservation, be the basis of a strategy for conserving diversity? Can the commercialization of genetic resources provide compensation that can, in any sense, be construed as ‘fair and equitable’? The answer to both questions is no, for reasons rooted in the structural inequalities stressed throughout this paper (see also Reid et al, 1993; Simpson and Sedjo, 1994; Swanson, 1995).

There can be few, if any, winners in an international competition among exporters of biological diversity. Those who would sell their biodiversity in the global marketplace, whether would-be ‘developing’ countries or local communities struggling for survival, must enter that market from a position of relative weakness. They are almost certain to emerge even poorer, both in terms of biodiversity and relative economic strength. No country in history has ever advanced up the international economic ladder by exporting primary commodities on ‘free market’ terms. Genetic resource primary commodities are no different in this respect.

In the emerging international ‘genetic resources’ market, prices are primarily determined by the short-term interests of pharmaceutical and agrochemical corporations.

14 The wealthier CBD signatories, with the apparent exception of Norway, have continued to cut their aid to less-developed countries, reneging on their promise to provide ‘new additional’ funds for biodiversity conservation (Lake, 1997).
based on their estimates of the potential profits to be made from them. Although the earth’s biological resources may indeed be virtually infinite, the opportunities for transnational bio-buyers to market profitable products from natural materials are limited. The global market for genetic ‘green gold’ may not be nearly as vast as the publicity for schemes such as Biotrade suggest.

In addition, the same or similar biological source materials are often found in more than one place (Brush and Stabinsky, 1996). This makes it easier for bioprospectors to play one source country against another. Will only those communities lucky enough to ‘own’ some organism or gene sequence that is both unique to their own territories and deemed worth paying for by a bioprospector be able to earn their ‘biodiversity benefits’? Moreover, new techniques for screening and then imitating, synthesizing, or growing natural pharmaceuticals enable companies to obtain the materials they want more quickly and cheaply, without making large investments or long-term commitments to source countries or communities.

Further, biotechnology advances enable corporations to alter the genetic make-up of natural samples, creating products that are—at least technically—‘innovations’ and therefore immune to legal patent challenges or demands by the original suppliers of genetic information for shares of profits from those products. Even in cases where a patented product uses genetic information traceable to one or a few sources, the nature and culture of which that biodiversity is a part, and the rest of nature, remains an externality for biotechnology firms, except in the very short term. The time scales of patents and product cycles do not begin to compare to those required for ecosystem regeneration, much less ecological and eco-social coevolution.

For all these reasons, privatization is a dangerous basis for a conservation strategy. Nor is it likely to generate much revenue for ‘development’. The promise of biotechnology transfers under the CBD has raised the hope that diversity-rich countries might gain the capacity to develop more specialized screened and/or refined natural product samples and extracts. But even if some can, in this way, add a bit of market value to their living heritage, they will remain at a great competitive disadvantage vis-à-vis foreign bio-buyers, given the tremendous superiority that transnational corporations already have in research, financing, and international marketing systems and legal resources.

There are, therefore, good reasons to expect that bioprospecting will go through a cycle of commodity boom, market saturation, and then bust, just as happened in the cases of indigo, rubber, sugar, and so many other once-touted tropical miracle crops, leaving the exporting countries poorer and their ecosystems degraded. ‘Genetic resource’ marketing is likely to become yet another instance of the oft-tried—and always failed—strategy of export-dependent development, in which priorities are determined by outsiders rather than by the needs of domestic economies and local communities.

Nevertheless, the focus of many Southern states, and of some NGOs, has shifted from calls to redress the damages caused by centuries of ‘biopiracy’ towards schemes for tapping into the anticipated genetic resource revenue stream (Mugabe et al, 1997; Sanchez and Juma, 1994). This trend illustrates again how the globalization of environmental management, framed by the environmental-economic paradigm and backed by the institutional and economic power of advanced capitalist states and multilateral

(15) These prices are not determined by the actual usefulness to ‘humanity’ of the pharmaceutical commodities that can be produced from them, but by their estimated likely profitability. A new drug found to relieve a disease that afflicts only a few thousand people, or that affects mainly people who are too poor to purchase the drug, will probably not be produced unless governments or charities intervene in the market.
institutions, is blunting the North–South disputes that once threatened to derail the new international environmental institutions. But at the same time challenges to market-based environmental managerialism are emerging from another source: ‘local’ resistance, projected onto the international stage.

Transnational movements and resistance to green developmentalism

The movement of resistance to property in life

No two ecosystems are alike, and no ecosystem, nor any endangered cultural group, can be ‘saved’ by relocating it. The CBD concedes, if only implicitly, this site-specific nature of biodiversity and the link between biological and cultural diversity. Article 8 of the CBD calls on treaty signatories to protect the “knowledges, innovations and practices” of “indigenous and local communities ... embodying traditional lifestyles” relevant to biodiversity [CBD, 1994, Article 8(j)], and to conserve both natural and agricultural biodiversity in situ; that is, in the ecosystems and communities where it has evolved or has been developed with human assistance (CBD, 1994, Articles 2 and 8).

These commitments resist being subsumed within the global environmental-economic paradigm. That paradigm is unable to take adequate account of the diversity within biodiversity, and the connection between that diversity and its geographical and social locality, because it has been designed to do exactly the opposite; that is, to produce generally (‘globally’) applicable criteria for mapping the biophysical world, ranking its contents, and prioritizing ‘environmental investments’. There is thus a contradiction within the CBD between the emphasis on IPR and resources as commodities on the one hand, and the recognized importance of local and indigenous practices and in situ conservation, on the other.

This contradiction might remain a moot point but for the fact that representatives of indigenous peoples, peasant agriculturalists, and their allies are increasingly organized internationally and persuasively vocal in the CBD. They are determined not to allow their cultures and the ecosystems they depend upon to be negotiated out of existence, reconstructed as commodities, auctioned off to bioprospectors, or ‘developed’ to death. To this end, they are challenging—on practical, ethical, and epistemological grounds—the application of IPR to nature and knowledge. Their critique of the ‘IPR solution’ contains elements of a counterparadigm (or counterparadigms) to that of green developmentalism.

The growing transnational coalition of opponents to IPR and other forms of ‘property in life’ includes locally and regionally based peasant movements, strongest in south and southeast Asia and Latin America. They represent themselves in international fora as the co-creators and guardians of the crop genetic diversity and low-input agricultural methods on which the long-term future of global food production depends. They have allied with regional and international organizations and coalitions of ‘indigenous peoples’ and minority ethnic groups.

In neopopulist environmental discourse, ‘indigenous peoples’ have become icons of a lost Eden. At the same time, Western-trained scientists increasingly recognize that many do have extensive, specialized knowledge about the ecosystems where they live. These trends have allowed indigenous peoples’ organizations to gain a privileged, although circumscribed, role in CBD and GEF deliberations. They have used this role to press for the inclusion in the CBD text of Article 8(j) and are now fighting for its implementation, even while struggling among themselves over difficult issues of identity (who qualifies as ‘indigenous’?). They have called for, among other things, “alternatives to the existing IPR system for the protection of indigenous people’s knowledge” the prohibition of “claims of non-indigenous peoples to IPR over the processes and products associated with indigenous peoples’ knowledges and genetic resources”,
and for "a moratorium ... on bioprospecting and ethnobotanical collections within indigenous peoples' territories until adequate protection mechanisms for indigenous knowledge are established" (Indigenous Peoples, 1996, points 4–6).

Also prominent in the anti-IPR movement, and actively promoting an indigenous-peasant movement alliance around this issue, are transnational NGOs and coalitions including the Penang-headquartered Third World Network, Rural Advancement Foundation International (based in Ottawa), Genetic Resources Action International (based in Barcelona), the US Institute on Agriculture and Trade Policy, the multinational Pesticide Action Network, and others based in Western Europe, Latin America, Ethiopia, India, and Japan.

Further support has come from individuals within the international conservationist NGOs and from intellectuals and organizations who oppose the patenting of organisms, human cloning, human gene collecting, genetic screening and surveillance, and other biotechnological intrusions. This broad coalition has influenced CBD decisions directly and through its members' ties to national CBD delegations, including those of India, Malaysia, the Philippines, and a number of Latin American, African, and Scandinavian countries. Although it does not speak with a single voice, its interventions have challenged green developmentalism in the CBD on several important fronts:

*Biosafety* The coalition successfully pressed for the CBD to work on a Biosafety Protocol to regulate the transboundary dissemination of transgenic crops and other genetically modified organisms, a process that had been staunchly opposed by the unofficial but powerful US delegation.\(^{(17)}\) In this and other fora the NGO—social movement coalition is challenging the green developmentalist assumptions that environmental and food production problems will be solved primarily by means of more and 'higher' technology.

*Agrobiodiversity* By insisting on the importance of *agricultural* biodiversity and the diversity-based practices of farming communities, the coalition has made it harder to restrict discussion of the human role in biodiversity conservation to a romanticized domain of 'tribal' peoples and 'wild' biodiversity.\(^{(18)}\) At a time when the ecological detriments of the green revolution have become widely apparent, and when public agricultural research budgets are being slashed, its critiques of industrial agriculture and the privatization of genetic resource research have found broad resonance among many staff of developing-country and UN environmental and agricultural agencies.

*Intellectual property rights* In the CBD and other multilateral fora, especially the FAO, IPR opponents are resisting the privatization response to the problems of diversity conservation and benefit sharing. They argue against the disingenuous proposition that IPR can create a level playing field for local and transnational would-be owners of genetic resources. Contrary to the claims of the environmental-economic paradigm, they further contend, IPR are not needed as incentives for invention. Rather, privatization would have a chilling effect on traditions of knowledge-sharing within communities and the innovation that depends upon that sharing (RAFI, 1997).

Organizations of indigenous and peasant movements and their NGO allies, along with a minority of Southern delegations, have kept up pressure for the internationally recognized right of states and indigenous 'nations' to refuse to allow the patenting of

\(^{(17)}\) US delegates continue to complain that the CBD Biosafety Protocol now under negotiation, which would attempt to set safety standards for the release of genetically modified organisms, may threaten the property rights of US companies.

\(^{(18)}\) CBD (1992, Article 2) defines 'genetic resources' to include both wild and *domesticated* species. It states that "domesticated or cultivated species are those in which the evolutionary process has been influenced by humans to meet their ends," and defines in situ conservation of such species as the "maintenance and recovery of viable populations of species ... in the surroundings where they have developed their distinctive properties" (my emphasis).
organisms and private monopolization of genetic resources and knowledge (Nijar Singh, 1996; see also OECD, 1996; South and MesoAmerican Indian Rights Center, 1996; Third World Network, 1994; 1995, 1996). Some call for implementation of the right, recognized in Article 27 of the WTO TRIPS agreement, for governments to develop sui generis systems of property rights. Other IPR opponents contend that sui generis as defined in the TRIPS accord concedes too much in the direction of corporate power and property in knowledge and life, and is better opposed by direct action and refusal to recognize the IPR claims of TNCs (Fliitner, forthcoming). A few Southern CBD delegations, including those of Colombia and Ethiopia, have endorsed demands by indigenous groups for an international moratorium on bioprospecting. Others have joined the call for ‘alternative’ or multiple IPR systems and “collective intellectual property rights” for local and indigenous communities (Tilahun and Edwards, 1996).

The majority of Southern delegations, however, have opposed recognition of any specific rights of subnational groups to local sovereignty over resource regimes. Article 3 of the CBD, which specifies that states have “the sovereign right to exploit their own resources pursuant to their own environmental policies” (CBD, 1994), is widely interpreted as backing for new government efforts to regulate access to biodiversity and to appropriate bioprospecting revenues at the national level—as in the much-touted contracts between the Merck pharmaceutical corporation and a Costa Rican government-created ‘NGO’ (Blum, 1993)—with little regard in practice for the ‘prior informed consent’ or adequate compensation of local communities.

As many Southern states fail to fulfill their professed commitments to respect indigenous territorial boundaries and other rights, the affected peoples are often forced to press their claims at the transnational level, through legal and public relations campaigns against ‘biopirates’ and transnational corporate despoilers of local environments. Increasingly, they are seeking alliances with environmentalist and other NGOs in multilateral fora such as the CBD.

Re-politicizing international environmental discourse
Answers to the socio-environmental crises that green developmentalism fails to address do not lie in the mere assertion of the rights of local communities or the validity (or superiority) or local knowledge. Indigenous sovereignty and the devolution of power over natural resources will not necessarily abate the predations of transnational (or local) timber and mineral extractors. Nor will it result, in itself, in more sustainable agriculture and resource use. Moreover, those environmental problems which are genuinely global, including genetic erosion and global warming, clearly do require urgent internationally coordinated action.

But the movements in defense of ‘indigenous and local’ communities remind us that such ‘global’ responses can have limited success, at best, in the face of extreme social and environmental injustice. Just as development in any meaningful sense will require increased democracy and greater equality, so does environmental sustainability depend upon environmental justice. Further, these movements continually repoliticize international environmental discourse, unmasking the state and private agendas that are advanced behind the smoke screens of the purported objectivity and universal applicability of the global environmental-economic paradigm and the claimed neutrality of global managerialist institutions.

The Preamble to the CBD recognizes the need to “anticipate, prevent, and attack the causes of significant reduction or loss of biological diversity at the source”, a commitment reaffirmed explicitly at the second CBD Convention. (CBD, 1996). In practice, however, it is a course that most governments and multilateral bureaucracies adamantly resist. The global economic paradigm reinforces this resistance. It characterizes the
'underlying causes' of ecological destruction as inanimate factors and faceless forces that can presumably be corrected without disturbing existing economic structures or powerful state, individual, or corporate interests (GEF, 1995). In contrast, the struggles of indigenous peoples and peasant communities for survival, territorial rights, and self-determination repeatedly call attention to those very structures and interests.

When indigenous peoples' representatives reminded the third conference of the CBD of its commitment to alternative agricultural practices and alternatives to Western systems of property rights, they incurred the wrath of delegates from several of the world's wealthiest countries with strong economic interests in the exports of the products of high-tech agriculture and of patented industrial-agriculture technology. Similarly, serious discussion of forest destruction by logging, mining, and petroleum projects is bound to call attention to those who profit directly from that destruction, including transnational companies and elites in the global South.

It is also likely to raise questions about the policies of bilateral and multilateral aid donors and lenders that promote environmentally destructive extractive export industries to meet debt payment and export growth targets. The ongoing structural adjustment conditionalities and free-trade pressures imposed by multilateral development banks and bilateral aid agencies are directly undermining the new 'green conditionalities' that are now required by the same international lenders and donors (Blaikie, 1995; McAfee, 1991; 1999).

Green developmentalism is attractive to international policymakers because it does not identify those who gain from environmentally destructive policies and practices. Instead, it blames biodiversity destruction on abstractions: 'market failures' and 'policy failures' (Perrings, 1995). But the direct threats to local cultural and the biodiversity are not so easily abstracted away. They have identifiable agents and identifiable beneficiaries at the local, national, and international levels. They are encouraged by particular policies of governments and multilateral institutions. Inevitably, efforts to address them will be politically charged.

**Defending diversity: on whose terms?**

Green developmentalism fosters the fantasy that we can 'green the planet' while continuing to grow along demonstrably unsustainable economic trajectories. It offers a rationale for the illusion that biological diversity can be 'saved' without fundamental changes in present distributions of political power. It purports to provide an objective metric for estimating the values of all components of nature worldwide, but actually offers values determined by the powers and desires of international elites.

Its global economic paradigm pins the fate of diversity on the outcome of competition among economically powerful bidders in the 'global' market, who may at best have a temporary interest in the conservation of one or a few elements of diversity excised from their eco-social context. But if diversity's chance of survival depends upon calculations of the prices at which its various components resources might be sold to ecotourists, timber, oil, and mining companies, researchers, or pharmaceutical firms, then diversity is doomed.

Inevitably, as 'indigenous and local' communities interact with the world beyond the local, many will seek access to wider markets and 'Western' knowledge and technology. Whether these processes necessarily lead to major diversity losses depends upon the terms on which they take place: those of local peoples, or those of the 'globalized' market. The greater the political autonomy, access to information, and economic self-reliance of local and indigenous communities, the more likely it is that they will be able to influence these terms, and to adopt and invent mixes of old and new cultural forms and technologies that work with nature instead of at nature's expense.
The conservation and sustainable use of biological diversity requires not only global plans and scientific priorities, but also a multiplicity of site-specific, information-intensive technologies relying heavily on inputs of local intelligence and planning to meet local and national needs. Further, strategies to save diversity must derive not only from assessments of economists, ecologists, and conservation biologists, but also from the economic and cultural importance of natural resources to the people who gather, farm, fish, hunt, worship, and otherwise live in direct interdependence with those resources, and who often have the most direct and longest-term interest in their conservation. At the same time, defenders of diversity at all levels must confront the larger political-economic trends that underlie its destruction, and the specific agents and beneficiaries of that destruction.

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