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## Guest Editor's Introduction

The contemporary world is becoming increasingly complex, and with no shortage of intractable conflicts. Problems such as climate change and geopolitical aggression by their nature call for interdisciplinary analysis, yet the academy grows increasingly specialized. Platitudes about the importance of interdisciplinary study notwithstanding, many celebrated scholars and experts retain a fairly narrow unidisciplinary focus. Fortunately, the field of political ecology offers a salutary exception to the general trend toward specialization.

Political ecology defies common characterization. It is exceedingly difficult, and probably not even desirable, to describe its “essence,” since political ecology is nothing if not broad in scope. It borrows from numerous other disciplines that are to varying degrees related to either political economy or human ecology (or both): physics, geography, anthropology, health, development, and history, to name a few. Moreover, the points at which different disciplines intersect to produce other interdisciplinary projects (e.g., physical anthropology, economic geography) are themselves likely to converge with others under the political ecology umbrella.

Among the possibilities, political ecology may represent the adoption of an ecological perspective (as in holistic or systemic) in studying problems relating to politics or political economy. Alternatively, it may stand for the use that policymakers make of knowledge obtained through the rigorous study of ecosystems and how human activity impacts upon them. Indeed, because of the myriad possible interpretations, Greenberg and Park (1994) advise against “defining” political ecology, insisting that there need be no “common core” shared by the alternative approaches. Identifying such a common core is nevertheless helpful here,

if for no other reason than to unify the four articles contributed to this issue around a particular theme. For this purpose, we employ one of the more common interpretations, that of political ecology as a synthesis of political economy and human ecology (see, among many others, Millikan 1992; Schmink and Wood 1987).

The articles presented here describe, albeit to varying degrees, the manner in which existing political circumstances—regional, national, or global—determine property rights, and with what consequences for the environment. In at least one article, the converse is true—that is, it considers how ecological changes determine rights or control over land within the relevant political economy context. Perhaps most important, the political ecology presented here emphasizes the “winners” and “losers” from ecological damage. It therefore gets into the related matter of ecological distribution, to be discussed shortly in this introduction as well as in two of the articles. Emphasis throughout is on the manner in which economic or social inequality and ecological damage (only insofar as it affects humans; “deep” ecology is beyond our scope) mutually influence or even determine each other. In keeping with the primary interest of this journal, economics and political economy play a central, though not exclusive, role.

The first article, by Joan Martinez-Alier, presents a taxonomy of existing political ecology conflicts. His emphasis is on ecological distribution, that is, the differential impacts on diverse economic agents of social costs associated with the use of natural resources or with pollution. The article notes that the “language of evaluation” involved in such conflicts largely depends on the participants involved. As examples, agents adversely affected may argue for monetary compensation equivalent to the ecological damage suffered, or they may maintain that the territory under contention is sacred and that it is therefore inviolable no matter the compensation. Alternatively, the author notes that affected groups may call for the defense of their human, indigenous, or collective rights, or they may insist on assessment of ecological values (e.g., the nutrient cycling and carbon sequestration functions provided by tropical forests) that defy expression in monetary terms.

The article, moreover, demonstrates that ecological distribution conflicts can be explained and even predicted by indicators of (un)sustainability borrowed from ecological economics, such as the human appropriation of net primary production (HANPP) or material and energy flow accounting (MEFA). It traces links between ecological conflicts and the “metabolic

profiles” of different societies (in terms of MEFA, HANPP), and discusses the languages of valuation used in such conflicts. The author recognizes that while a fair amount of recent attention has been given to the “power” that strong individuals and groups exert over others through their decisions—to, say, build a polluting factory or destroy a forest—another more subtle form of power is largely ignored. It is the “power of procedure,” which is the power to impose a method (or language) for evaluating or resolving a conflict. The clear implication is that monetary valuations and cost-benefit analysis are exclusionary languages with the potential to intensify rather than ameliorate ecological distribution conflicts.

The article by Tor A. Benjaminsen and Gunnvor Berge emphasizes the growing importance within the field of political ecology of myths, orthodoxies, narratives, and discourses. Its specific focus is on Western myths or images of the desert town of Timbuktu, Mali, and its hinterland throughout history. In a somewhat different perspective on political ecology, the authors argue that such images are produced more as a result of Western needs than of the factual conditions on the ground. In other words, inequality across countries permits the stronger to distort the “truth” in line with their interests. The first European myth about Timbuktu, born in the late Middle Ages but cultivated during the Romantic period, depicted the town as an African El Dorado with roofs and streets of gold. It was later supplanted by the image of Timbuktu as the “end of the world,” which during the scramble for Africa reinforced Europe’s celebration of its “heroes” (whether military conquerors or discoverers).

The direct relevance to ecology is seen in the third idea or myth addressed in their article, the myth of “desertification.” According to Benjaminsen and Berge, the desertification myth emerged early in the colonial period in response to a need to justify colonial occupation, the main idea being that the “natives” were careless and ignorant and not able to adequately look after their local environment. In order to achieve development and to arrest desert encroachment, European powers had to provide their “scientific management” to the local people. As argued by the authors in their article, the myth of human-induced desertification persisted because it also suited the interests of African governments and international donors. The authors view the three Western myths about Timbuktu and the drylands in the desert margin south of the Sahara as products of their time, illustrative of how a Western “center” in various periods has seen it necessary to present an African “periphery.”

Alain Lipietz's piece is a postscript to a new edition of his book entitled *What Is Political Ecology?* In it, he claims that the past four years have only vindicated his claim that ecology will be the dominant theme in global affairs for the new century. His article focuses on international disputes that carry ecological repercussions, such as the conflict around the Kyoto Protocol and climate change, or the growing threats from the spread of genetically modified organisms and to plant and animal biodiversity. In equating a "good political ecology" with sustainable development, he argues that its principal enemies (the United States, multinational corporations, and the World Trade Organization [WTO]) are shortsighted, not recognizing that the world's growing ecological crises will ultimately affect *everyone*, rich and poor alike (though possibly not—and this is the important point—rich individuals from present generations).

Lipietz views the 2002 Johannesburg Summit (the World Summit on Sustainable Development) as somewhat of a check on the dominance over the preceding decade of the U.S.-WTO duo, with long-overdue challenges to the hegemony of the market finally emerging. He recognizes, however, that what was achieved was merely a parrying of the continued offensive against the environment, rather than a meaningful move in the direction of sustainable development. For the latter to be realized, Lipietz in his article appears to view as indispensable an alliance between Europe and the developing countries of the world. He is also cautiously optimistic about a subsequent consolidation of forces around a "World Environmental Organization," to counter the strength of the WTO. His optimism appears based on the modest success that other groups like the World Health Organization sometimes have at checking some of the WTO's more outlandish provisions.

Finally, in the article by Mariano Torras, political ecology stands for the manner in which different ecological distribution scenarios can be reflected in a country's income accounts, and with what implications for national well-being. In response to criticisms of GDP growth as an indicator of well-being improvement, the article develops an alternative well-being measure that accounts for the direct ecological and social consequences of GDP growth as well as for ecological distribution. Using Brazil as a test case, the author applies the measurement approach to data spanning more than thirty years, from 1965 to 1998. Torras describes a history of sustained regressive ecological distribution, in which the economic policies of Brazilian military governments from the mid-1960s to the mid-1980s overwhelmingly favored the oligarchy at the

expense of the poor, and contributed to ecologically unsustainable practices also disproportionately affecting the latter.

In contrast to the approach taken by Martinez-Alier in his article, Torras calls for research into quantifying the ecological distribution so that it may be factored into the expanded social accounting method that he develops. Absent such numbers, the author allows for different possible ecological distribution scenarios and compares among the varied outcomes, finding that even though per capita GDP growth exceeds 3 percent per annum, national well-being improves far less quickly in one scenario that does not assume ecological distribution to be regressive. Assuming it to be regressive (as is not unrealistic), well-being *diminishes* over the period studied. In addition to reinforcing doubts about the merit of GDP accounting in well-being assessments, the results of the study demonstrate the importance of the existing ecological distribution in assessing a country's well-being.

### **Impacts of Inequality on the Natural Environment**

One of the chief concerns of political ecology is the manner in which social inequality influences environmental or ecological outcomes. While a lack of consensus remains (at least in the economics literature) on the relationship between inequality in the distribution of income and ecological damage, the assertion that political inequality or a maldistribution of power in the population tends to produce adverse ecological outcomes is certainly plausible. Indeed, recent research concludes along similar lines (e.g., Boyce 1994; Torras 2005).

As an example, regions undergoing substantial deforestation are likely to exhibit unusually severe inequality in the distribution of power. Powerful or politically empowered agents typically stand to gain much from the activity. Not only do private economic gains (e.g., revenues from cattle ranching or mining) accrue to those most interested in deforestation, but the attendant costs (e.g., soil erosion, siltation of streams) are often mostly suffered by the local population, as the more powerful groups generally have greater mobility. The losers are powerless to stop the deforestation. Often they have more pressing needs (e.g., obtaining sufficient food, keeping their families healthy) that would preclude their mobilizing to stop it, but the powerful also employ the media to influence popular perception about events in the area, often portraying the losers as the culprits in the deforestation.

We can see the consequences of unequal power relations in the international realm as well. Take the example of an industrialized country using a poor developing country as a dumping ground for its toxic waste. It is an example of cross-national power inequality that in all likelihood results in greater production of toxic waste than might otherwise be the case. The developing country as a whole acts against its interests because most within the country are relatively powerless; of course there are the few agents in such countries that become private gainers through compensatory payments.

Larry Summers finds certain economic logic in the act of dumping toxic waste in “the lowest-wage country.” In his well-publicized memo to World Bank colleagues in the early 1990s, he implies that the social cost would be lower than keeping it in high-wage countries, since the human lives affected would not be worth as much. He likely also gave his blessing to the exchange in the late 1990s between Taiwan and North Korea, in which the former shipped tens of thousands of barrels of nuclear waste to North Korea for which the latter received compensation in cash. Like many economists, Summers favors such trades on the basis of different income elasticities of demand for environmental quality; relatively well-off societies like Taiwan’s naturally place a higher premium on a quality environment (or absence of nuclear waste) than do relatively poor countries like North Korea, which have more pressing needs, such as feeding the population (when not enriching corrupt members of the social elite).

The above are examples of how more powerful agents in more powerful societies frame the discussion over ecological damage in terms of monetary values—costs and benefits—instead of an alternative discourse, such as the fundamental human right to live in a clean environment. It is a recurrent point in Martinez-Alier’s contribution to our collection of articles, and also implicit in the article by Lipietz. The latter refers to the so-called precautionary principle—the idea that a project may be pursued only in the presence of evidence that it will not meaningfully compromise the integrity of the natural environment—emphasizing that it is the responsibility of ecologists in Europe to ensure that it trumps crude cost-benefit analysis in EU environmental policy discussions.

Severe political inequality, finally, permits more powerful agents, through the influence of the media, to perpetuate certain myths. We have already seen the example of deforestation as the primary responsibility of the poor and marginalized. Another example is the story told about “desertification” in West Africa, namely, that it results from unsustain-

able land use by the local people. A recurrent theme in three of the articles is the inattention given to—or even disdain for—traditional knowledge, particularly in relation to land use. Powerful agents (often though not always well-meaning) hold to the view that primitive people are ignorant or irresponsible, and that they use their land in a reckless manner, requiring that they be informed about the modern techniques available. In fact, as is often the case it is the so-called primitive people that use their land more sustainably than the modern-day “experts.” Most historical accounts indicate as much.

### **Distribution of Ecological Damage and Its Social Consequences**

If inequality adversely affects the environment we, as political ecologists, ought to consider whether ecological damage likewise influences the degree of inequality. Here there are two distinct though related questions. First, are ecological costs or damages roughly equally shared across a given population? If not, are they basically experienced in proportion to a given agent’s contribution to the ecological damage? Second, does ecological damage tend to ameliorate or exacerbate political inequality, and to what degree? (Or is there at best a weak reverse link between the two?) One possible manner in which ecological damage may intensify political inequality is, as already noted, seen in how more powerful agents with access to the media of communication distort actual events and blame ecological problems on, say, overpopulation or slash and burn agriculture. It results in the further marginalization of the less powerful, since they are effectively recast as the villains in the ecological drama.

Although both of the above questions are important to political ecology, the articles presented in this issue mostly address the first. Martinez-Alier was the first (to my knowledge at least) to coin the term “ecological distribution” to describe the differential impacts of ecological damage on different agents. He distinguishes between social, spatial, and temporal ecological distribution (see Martinez-Alier 1995); the first refers to ecological distribution within a region or country, the second to cross-regional or international distribution, the last to ecological distribution across generations.

Martinez-Alier’s article for the present issue cites a number of conflicts in which social ecological distribution appears regressive in its effects. Examples include the numerous shrimp hatchery export in-

dustries across Latin America and Asia, which threaten mangrove swamps on which the local populations depend, the Crees against Hydro Quebec, and the Ogoni and Ijaw against Shell in the Nigerian Delta. In the article by Torras, the activism of Brazilian tropical forest residents is presented as further evidence that the poor are disproportionately hurt by deforestation. The problem is not new, first gaining international prominence with the struggle by Chico Mendes and his Acre constituents for protection from cattle ranchers of their “extractive reserves”—areas of forest rich in products such as resins, latex, fruits, and nuts. He was murdered by gunmen associated with one of the ranchers that stood to gain from the deforestation in Acre, as, it appears most recently, was Sister Dorothy Stang—who also fought against deforestation—in the Brazilian state of Pará.

The more well-known literature on environmental justice also addresses the question of social ecological distribution, though generally in the specific case of pollution. It is often found (Bullard 2000) that pollution tends to concentrate in areas populated mostly by poor and less empowered individuals. In other words, not only might inequality produce more pollution than otherwise, but the distribution of pollution is itself regressive. The regressive ecological distribution, moreover, in all likelihood exacerbates poverty and inequality. If a high concentration of pollution results in greater frequency and/or severity of illness, it requires a portion of a possibly already meager income to deal with the problem. In this manner, the affected individual or family has been made poorer in the sense of purchasing power. The same may apply in the case of deforestation. Where some families may previously have relied on the local forest for products, including food, wood, and resins they may now need to purchase these in the market, again reducing their overall purchasing power.

Spatial ecological distribution relates to the international distribution of ecological damage. In a number of cases, unequal international relations give rise to an ecological debt owed by some countries to others. Examples include compensation due to developing countries for damage caused by rich countries through their excessive emissions of greenhouse gases, or for the local ecological damage (e.g., soil erosion, contamination of water supply, mercury poisoning) inflicted by foreign companies. Lipietz and Martinez-Alier both provide as examples the compensation deserved by victims of “biopiracy”—in other words, the act of patenting and selling in world markets some pharmaceutical prod-



ucts with traditional use-value to the local people of some region. According to the article by Martinez-Alier, the total ecological debt owed by the rich countries to developing countries is likely to be much greater than the total external debt owed by the latter group. The claim is substantiated in another study by Torras (2003).

Finally, there is the matter of temporal ecological distribution, which concerns the intergenerational distribution of ecological damage. It is the type of ecological distribution that has received by far the most attention in the economics mainstream. It should hardly come as a surprise since, as noted by Lipietz, in the long run, ecological damage is the concern of *all*, not merely the poor and marginalized groups. Temporal ecological distribution therefore concerns sustainable development, and Lipietz's article is concerned with how to put in place "good" institutions that will protect the long-run interests of everyone from the shortsighted interests of those who today can obtain economic benefits from unequal social and spatial ecological distribution.

The above are not merely academic political ecology classifications. On the contrary, sensitivity to differences among them is instrumental in effectively confronting today's global challenges. If Lipietz is correct that ecology will be the dominant theme in twenty-first-century global affairs, it will be inseparable from political ecology and ecological distribution. In contemplating conflicts such as the Kyoto Protocol implementation, we must recognize not only that social, spatial, and temporal ecological maldistribution have a hand in the problem that gave rise to the agreement but also—and this is more important—that the stances adopted in the debate by Brazil or France or any other country with a stake in it themselves depend on whether the problem is viewed "socially," "spatially," or "temporally." Although only the latter directly concerns future generations and as such is related to sustainable development, I submit that we cannot seriously contemplate sustainable development without considering relationships between core and peripheral countries or between the "haves" and "have-nots" within each country. It is in this important manner that political ecology, rather than being a mere academic enterprise, crucially informs sustainable development.

## References

- Boyce, J. 1994. "Inequality as a Cause of Environmental Degradation." *Ecological Economics* 11: 169–78.

- Bullard, R. 2000. *Dumping in Dixie: Race, Class, and Environmental Quality*, 3d ed. Boulder: Westview Press.
- Greenberg, J., and T.K. Park. 1994. "Political Ecology." *Journal of Political Ecology* 1: 1–12.
- Martinez-Alier, J. 1995. "Distributional Issues in Ecological Economics." *Review of Social Economy* 53, no. 4: 511–28.
- Millikan, B.H. 1992. "Tropical Deforestation, Land Degradation, and Society: Lessons from Rondônia, Brazil." *Latin American Perspectives* 19, no. 1: 45–72.
- Schmink, M., and C.H. Wood. 1987. "The 'Political Ecology' of Amazonia." In *Lands at Risk in the Third World: Local-Level Perspectives*, ed. P.D. Little, M.M. Horowitz, and A.E. Nyerges. Boulder: Westview Press.
- Torras, M. 2003. "An Ecological Footprint Approach to External Debt Relief." *World Development* 31, no. 12: 2161–71.
- . 2005. "Income and Power Inequality as Determinants of Environmental and Health Outcomes: Some Findings." *Social Science Quarterly* (forthcoming).

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