

ENVIRONMENT

Globalization of Conservation: A View from the South

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Large international nongovernmental organizations (INGOs) are increasingly setting the global conservation agenda. These INGOs have developed a range of tools, e.g., Biodiversity Hot Spots (1), Global 200 Ecoregions (2), and others (3) to set priorities and to compete with each other. They often use a corporate “branding” strategy to help raise funds and to define and communicate their niches in a crowded and competitive market. This corporate model has been very successful for fundraising: Conservation International’s “Hot Spots” strategy accompanied an increase in overall annual expenditures from U.S.\$27.8 million in 1998 to U.S.\$89.3 million by 2004, and World Wildlife Fund U.S.A.’s “Ecoregions” program accompanied a rise in expenditures from U.S.\$80 million to U.S.\$121.7 million between 1997 and 2005 (4). This helped offset declines of ~50% in government and multilateral agency investment in biodiversity conservation over the past decade (5) while expanding the influence of these INGOs globally. These factors have led some to equate the operations of large INGOs with transnational corporations (6).

Although these brands are derived from conservation science, they are vulnerable to scientific criticism (7). For example, prior-

ity-setting plans that target fixed areas for conservation (e.g., Hot Spots and Ecoregions) are insufficient to deal with fast-moving threats such as pathogens or invasive species (8), the alteration of species’ ranges due to climate change (9), or spatially dynamic marine ecosystems (10). Furthermore, large-scale international development initiatives, designed centrally and top-down, have rarely met expectations (11). This does not bode well for globalized conservation approaches, which require that the often inadequately evaluated strategies of developed country INGOs be adopted by developing countries (12, 13). Such top-down approaches can fail to link agendas of a broad constituency of local communities, scientists, conservation practitioners, and policy-makers (14, 15).

In some cases, the investments of foreign conservationists are seen as a threat to sovereignty and an imposition on local peoples. For instance, in Bolivia, where INGOs like Wildlife Conservation Society and Conservation International have helped establish and manage national parks, there have been calls for the “nationalization” of protected areas. Although protected areas have never been out of government control, foreign organizations are seen by some Bolivians as usurping control of national territory and as having disempowered grassroots efforts. Here, it has proven difficult to convince government and local communities that conservation INGOs are free of hidden intentions (16–18). Similarly, calls made by international conservationists to remove tribal people from parks in India to better protect tigers may have further polarized positions, making the search for workable solutions even more difficult (19).

It can be argued that INGOs are fundamentally different from globalizing corpora-

Successful global strategies for biodiversity conservation require increasing reliance on local leadership and major investment in local capacity.



tions. What leads to success in commerce is profit, whereas success in developing country conservation typically hinges on local support to sustain results. Globalization of industry followed three phases (20): first the 19th-century “international model,” with companies selling goods through overseas sales offices; then, the 20th-century classic multinational corporation, where the parent created smaller versions of itself overseas; and finally, the 21st-century globally integrated enterprise, where the corporation acts as a single global entity, able to place people and operations anywhere around the world. The most effective modern multinationals recognize the importance of local knowledge, e.g., for product sales. However, generalized global approaches fail for biodiversity conservation at local scales, because solutions must integrate extremely diverse natural, socioeconomic, and cultural systems and usually require a sense of community ownership.

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One trend in the globalization of conservation is that INGOs are increasingly registering in developing countries. For example, Conservation International and The Nature Conservancy are now legally registered in at least 18 and 23 developing world countries, respectively (21, 22). This provides greater accountability to national governments and donors, but also enables them to compete for funds with local NGOs, which may decrease efforts to strengthen local institutions. This can result in developing-world conservationists, with locally tuned priorities but lacking donor connections, being obliged to obtain funds from INGOs pushing global agendas. Ultimately, this can lead to INGOs edging out local institutions essential for sustaining long-term conservation (19). It also means that changes in donor or INGO priorities can lead to abrupt withdrawals of support. Conservation efforts then fail if local conservationists have not been trained, or local institutions have not been developed with their own programs and funding. Training is usually insufficiently supported: e.g., only 4% of the U.S.\$3.26 billion invested in Latin American biodiversity conservation between 1990 and 1997 was specifically spent on capacity building (23). Similarly, the U.S. Agency for International Development, a key supporter of international conservation, has cut back university scholarships in all fields for developing world students to 900 per year from a previous 20,000 (24). Furthermore, the lack of long-term career structures often results in scarce local practitioners migrating to developed countries, weakening conservation infrastructure in front-line countries.

Biodiversity conservation continues to require improved integration with human welfare concerns. This has been central to a long-standing debate among environmentalists stretching back at least to the 1970s when the Club of Rome think-tank, in its "Limits to Growth," emphasized the global risk to humanity and ecosystems from natural resource depletion, greatly influencing the modern environmental movement (25). At the same time, developing-world scientists from the Bariloche Foundation in Argentina produced the "Latin American World Model," which stressed the need to address socioeconomic concerns to build what we would now call a sustainable society (26).

Investment will be most effective where such issues (as well as social justice and governance regimes) are addressed adequately and where local capacity exists; however, conservationists need not abandon countries that score poorly on development criteria. Here,

support can be targeted and managed so that local capacity is built and marginalized indigenous peoples and other local stakeholders become equal partners to maximize prospects for success (5). Part of the solution is to increase local pools of practitioners at all levels, from community parabiologists to university professors and government officials (27). INGOs could provide funds for salary and staff retention at local organizations. Investment in scholarships for first-world universities could be matched with funds for strengthening developing country universities and technical programs where studentships typically cost much less.

Bolstering independent local institutions (e.g., civil society organizations, universities, and local government agencies) is key to keeping conservation on national agendas in developing countries. Small, locally focused organizations working at the front lines of biodiversity loss are often the most effective; witness the rise of community-based conservation projects across the developing world with examples including the Mamirauá Sustainable Development Reserve and the Pontal do Paranema area in Brazil, the Kaa-Iya del Gran Chaco National Park in Bolivia, and other similar areas in Africa (28, 29). In these cases, although international assistance sometimes provided essential help, key to success has been the existence of strong local organizations to take the lead in implementing management. This may hold true even in developed countries, where local chapters of national conservation NGOs are often the groups that effect change (e.g., regional chapters of the Audubon Society in the U.S.A.). Although such institutions are weak in much of the developing world (30), they are critically important, because they can adapt the conservation agenda for local implementation, working collaboratively with government institutions and policy-makers. The bottom line is that biodiversity will only be conserved if local people and interests want to save it for ethical and broadly utilitarian purposes. This level of support has to be large enough to resist a minority that may seek alternative land uses for narrowly selfish utilitarian reasons.

Some INGOs have fostered collaboration by setting up egalitarian networks of local conservation organizations that are mutually supporting, around the world. Examples include BirdLife International (31) and the Wildlife Trust Alliance (32). In these cases, developed country NGOs help raise funds for agendas set by local partners. We recognize that INGOs have efficiencies

of scale and operation, as well as an important role in influencing global policy. However, we argue that leadership in conservation has to be decentralized and better integrated into local conditions. Locally produced strategies and agendas, implemented by strong local institutions and individuals are key to success.

References and Notes

1. N. Myers *et al.*, *Nature* **403**, 853 (2000).
2. D. M. Olson, E. Dinerstein, *Ann. Missouri Bot. Gard.* **89**, 199 (2002).
3. T. M. Brooks *et al.*, *Science* **313**, 58 (2006).
4. Capital Research Center, www.capitalresearch.org/.
5. M. Chapin, *World Watch* **17**, 17 (2004).
6. D. Ransom, *New Int.* **383**, 2 (October, 2005).
7. C. D. L. Orme *et al.*, *Nature* **436**, 1016 (2005).
8. J. R. Mendelson III *et al.*, *Science* **313**, 48 (2006).
9. C. D. Thomas *et al.*, *Nature* **427**, 145 (2004).
10. E. A. Norse, L. B. Crowder, Eds., *Marine Conservation Biology: The Science of Maintaining the Sea's Biodiversity* (Island Press, Washington, DC, 2005), 496 pp.
11. W. Easterly, *The White Man's Burden: Why the West's Efforts to Aid the Rest Have Done So Much Ill and So Little Good* (Penguin Press, New York, 2006), 436 pp.
12. P. J. Ferraro, S. K. Pattanayak, *PLoS Biol.* **4**, 482 (2006).
13. B. S. Halpern *et al.*, *Conserv. Biol.* **20**, 56 (2006).
14. S. Aswani, M. Lauer, *Hum. Org.* **65**, 81 (2006).
15. S. Schwartzman, B. Zimmerman, *Conserv. Biol.* **19**, 721 (2005).
16. "Gobierno recupera hoy propiedad y soberanía de áreas protegidas," *El Diario* (La Paz, Bolivia), 26 August 2006 [in Spanish]; www.eldiario.net/noticias/nt060826/5nal.php?pag=5_01nal.html.
17. R. M. Ruiz, *J. Sustain. Forest.* **17**, 7 (2003).
18. "An interview with Bernardo Peredo: Indigenous communities, biodiversity, natural resources, and sustainable development in Bolivia," *In Motion Magazine* (10 June 2007); www.inmotionmagazine.com/global/bp_int.html.
19. V. Saberwal, M. Rangarajan, Eds., *Battles over Nature: Science and the Politics of Conservation* (Permanent Black, Delhi, 2003), 412 pp.
20. Anonymous, *Economist* **383**, 67 (7 April 2007).
21. Conservation International, www.conservation.org/.
22. The Nature Conservancy, www.tnc.org/.
23. G. Castro, I. Locker, *Mapping Conservation Investments: An Assessment of Biodiversity Funding in Latin America and the Caribbean* (Biodiversity Support Program, Washington, DC, 2000), 79 pp.
24. *The U.S. Response to East African Famines and the Future Outlook for Food Aid in Africa, Hearing before the House Committee on International Relations*, 108th Congress, 1st session (U.S. GPO, Washington, DC, 2003), 89 pp.
25. D. H. Meadows, D. L. Meadows, J. Randers, W. W. Behrens III, *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind* (Universe Books, New York, 1972), 205 pp.
26. A. O. Herrera *et al.*, *Catastrophe or New Society? A Latin American World Model* (International Development Research Centre, Ottawa, Canada, 1976), 108 pp.
27. J. P. Rodriguez, J. A. Simonetti, A. Premoli, M. A. Marini, *Conserv. Biol.* **19**, 969 (2005).
28. D. Hulme, M. Murphree, Eds., *African Wildlife and Livelihoods: The Promise and Performance of Community Conservation* (Heinemann, Portsmouth, NH, 2001), 344 pp.
29. K. M. Silviu, R. E. Bodmer, J. M. V. Fragoso, Eds., *People in Nature* (Columbia Univ. Press, New York, 2004), 463 pp.
30. C. B. Barrett, K. Brandon, C. Gibson, H. Gjertsen, *Bioscience* **51**, 497 (2001).
31. BirdLife International, www.birdlife.org/.
32. Wildlife Trust Alliance, www.wildlifetrust.org/.