

Conservation in the Real World

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Recent correspondence in *Science* has centered on whether conservation of biodiversity should focus on protected areas, where humans are excluded, or on sustainable development in areas where people live, a strategy referred to as community-based conservation.* The debate raises some important issues. First, protected areas and community areas are not alternatives. Rather, they are complementary strategies, and neither is self-sustaining. Protected areas are essential for the conservation of some species, but for practical purposes they can only represent a small fraction of the world's biota. Second, most biodiversity (such as insects and microbes) lies in regions where local communities cannot use it for self-sustaining commercial enterprise. Integrated Conservation and Development Projects (ICDPs) provide a form of compromise, in which conservation agencies supply aid in return for local stewardship of the biota. However, there are many undeclared problems with such schemes. For example, there is often a lack of compliance by local communities once aid projects are completed, and both central governments and commercial interests often override local authorities.* Recognition of these problems is a first step toward finding solutions to them.

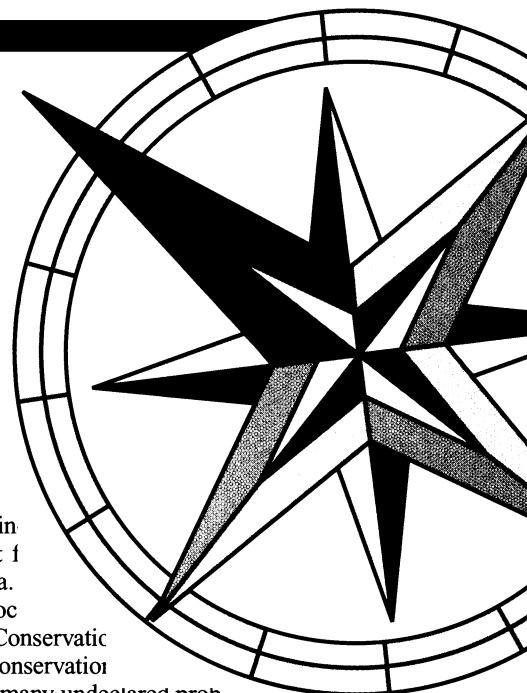
One lesson from past ICDPs is that we cannot assume that a legislated protected area will automatically save biodiversity. All such areas are suffering attrition in terms of loss of area, habitats, and species. They become degraded through illegal resource use unless there is formal governmental intervention to prevent attrition. A policy of active replacement of lost area is required if these reserves are to be maintained in the long term.† Conservation also has to focus on solving the underlying social problems. If local communities are to succeed in maintaining protected areas, then outside economic assistance must find ways to ameliorate poverty and illiteracy, allocate resources equitably among all community members, and stabilize populations in regions surrounding the protected areas. Economic assistance must be persistent, but ways need to be found to assess whether the community is living up to its commitments to conserve biodiversity. Where protection of biodiversity is not seen to be of clear economic benefit to the community, outside assistance should change this condition by helping to increase community pride in their environment, increase the local economic benefits of conservation, rehabilitate depleted resources, and increase the community's ability to control the use of resources by outside interests. Amboseli National Park in Kenya is a good example of cooperation between local communities and external conservation agencies to maintain the large mammal ecosystem.

For most conservation projects, sustained and flexible outside support will be required. This is contrary to the philosophy of all current donor programs. Such programs are designed for average environmental conditions under which nature and human society can coexist. However, almost inevitably an environmental disaster will occur, to which the poorer countries are the most vulnerable. Under such circumstances, additional external assistance will be required to prevent the loss of biodiversity caused by the precedence of human demands. Further intervention will be required to curb harmful and excessive resource extraction and the problems of governance that generally disenfranchise those who sustain themselves on local resources. Although these problems manifest themselves on the local and national levels, they are unlikely to be resolved without substantial support and pressure from abroad. Unfortunately, there is little precedent for such actions aside from military operations. Unless we can overcome these kinds of problems, neither protected areas nor community-based conservation projects are likely to succeed.

The past history of international assistance for protected areas and community-based conservation projects is not encouraging: it has tended to be episodic, not sustained. Short-term help in this area won't work. Long-term commitments, to support long-range planning and permanent positions, are essential.

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*A. Inamdar, H. de Jode, K. Lindsay, S. Cobb, *Science* **283**, 1856 (1999), and references therein; C. J. M. Musters, H. J. de Graaf, W. J. ter Keurs, *Science* **287**, 1759 (2000). †A. R. E. Sinclair *et al.*, *Ecol. Appl.* **5**, 579 (1995).



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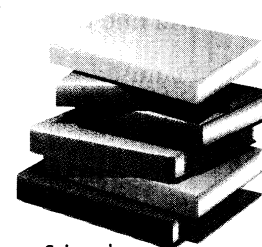
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