

Conservation education: the need for regional approaches supporting local initiatives

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Abstract Conservation education has usually focused on local scales; however, local approaches may lack the capacity to cope with conservation problems that span multiple spatial and temporal scales. I present an educational model to foster local educational initiatives supported by regional perspectives. Bringing local and regional educational perspectives together could enhance the success of conservation programs as a result not only of actions conducted at local and regional scales but also of synergistic effects deriving from interactions between local and regional people. This model has a broad application to many management and conservation problems.

Key words environmental education, conservation, education programs, local and regional approaches

As concern for solving local conservation problems grows worldwide, environmental education arises as a useful tool because it can help improve interactions between human needs and natural resources in the search for sustainable ways of exploitation (Saberwal and Kothari 1996). Local rather than global perspectives have more common use in environmental education applied to conservation (Ebert-May et al. 1992, Bodmer 1994, Durbin and Ralambo 1994, Jacobson 1995, Noss 1997). Worthy examples feature local resources in the indigenous exploitation and management of tropical forests (for a review see Wiersum 1997) or in the development of ecotourism as a strategy for the conservation of macaws (*Ara* sp.; e.g., Munn 1994). However, local approaches may end up as isolated initiatives unless connected to regional conservation strategies where global consensus, support, and funding are more readily available. Local educational initiatives supported by regional perspectives may improve conservation programs in many ways, including synergistic effects that result from interactions at local and regional levels.

Benefits differ between local and regional educa-

tional approaches (Table 1). Generally, local perspectives are suited for specific conservation problems (e.g., illegal hunting of an endangered species in a protected area); in these cases, local people are the target of education initiatives. Such programs focus on short-medium timeframes and are usually supported by low-political-decision levels. Regional approaches, on the other hand, reach out to a broader sector of society with general messages (e.g., the risks of deforestation). Higher levels of political decisions are frequently involved in implementing such programs, with the intention of increasing public awareness in the medium-long term. While these differences are not clear-cut and overlap is common, they provide a framework to combine local and regional approaches.

Conservation education efforts based solely on one approach, though useful in certain circumstances, may lack the capacity to cope with conservation problems that span multiple spatial and temporal scales. For example, local initiatives could foster the protection of endangered animal species in certain states, but may not guarantee protection elsewhere if regional coordination is lacking. Such

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Table 1: General differences between local and regional approaches in environmental education applied to conservation. This classification is aimed at showing only the empirical benefits of each approach and does not reflect all potential distinctions.

| | Local | Regional |
|---------------------------|-----------------------------|---|
| Spatial scale | Town, city, province, state | Province, state, county, international center |
| Temporal scale | Short-medium term | Medium-long term |
| Problem solution | Specific issues | Broad issues |
| Political levels involved | Low | High |
| Range of activities | Restricted and concentrated | Generalized and scattered |

is the case for some bird species in Argentina; they are legally protected as threatened in some provinces while in other provinces they are considered pests. This situation increases the illegal commercialization of birds, mainly sold as pets. They are captured indiscriminantly everywhere, but eventually are exported from free-market provinces. On the other hand, regional educational initiatives usually address general conservation problems (e.g., using pesticides) without enough specificity to be adopted in practice by locals (e.g., the best combination of biological treatments for specific types of agricultural practices). In this case, regional approaches may have no support from local people, whose problems are often solution-specific.

Bringing local and regional educational perspectives together could enhance the success of conservation programs, particularly those with important social roots. When a careful coordination of efforts is established among public agencies, NGOs, educational centers, and the media, the scope of educational undertakings could be enlarged so as to involve more sectors of society. Because local people lack political clout, taking the problem to the regional level could help gain public support to influence political power (Czech et al. 1998).

The combination of levels brings about synergistic effects—that is, innovative approaches to conservation education deriving from interactions between local and regional people. Regional public involvement may foster cooperation with locals to exchange information, technologies, and human resources, thereby reducing the time necessary to achieve general consensus toward specific conservation problems. A recent conservation program (known as Araucaria), developed by the Spanish government in Central and South America, is a good example of how regional cooperation can raise

local environmental educational standards (García-Varas and Xandri 1998). One program concern is that in many conservation hotspots local people are sometimes not well prepared to deal with the interests of international companies (e.g., pharmaceutical firms in search of new medicines). Through education, Araucaria in-

tends to prepare local and indigenous people to seek agreements that combine exploitation with sustainable development. Such regional conservation programs may ameliorate local understanding of people's roles in their environment and inspire new social scenarios for the discussion of conservation and management issues.

The interaction between local and regional people and its potential for implementation in conservation deserves emphasis in education programs. The challenge of conservation education is primarily to change people's attitudes and behaviors (Smith 1995). Frequently, local and regional people have different cultural backgrounds (e.g., urban vs. rural); thus, focusing on their interactions may shape new attitudes that transcend contrasting views and needs. These new insights should be incorporated in education programs as a way of attracting the attention of social sectors not involved previously in conservation. Local and regional perspectives could be adapted to any conservation education program. Figure 1 presents one such model, modified from Jacobson and Padua (1995) to include local and regional roles and interactions. The goal is to strengthen public awareness about a certain conservation problem by placing equal value on local and regional levels. Two target publics can be recognized. A direct public represents the most important action level (local). An indirect public, a cross-section of the regional population, may get involved during or after program completion. The regional public should be selected carefully to generate support for local initiatives. In the end, the selection of local and regional targets depends upon the spatial (geographic location) and temporal (program duration) scales and the specific goals of the project (Figure 1). For instance, an educational program aimed at restoring wildlife habitats in urban parks may identify neighbors

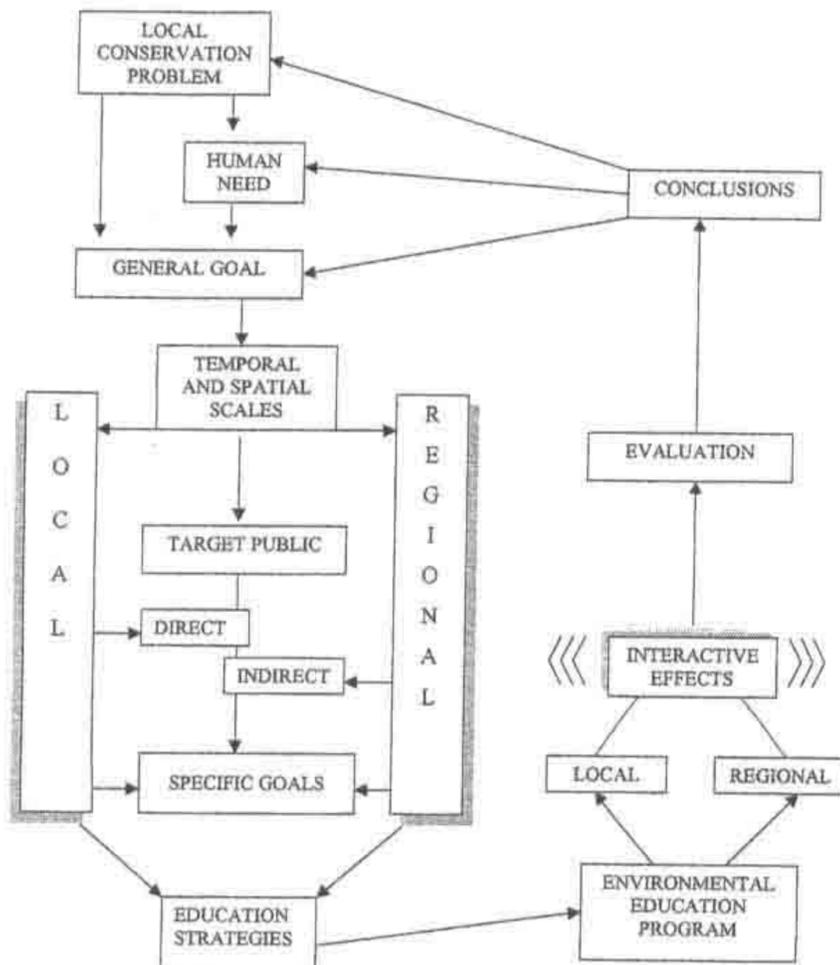


Figure 1. Steps proposed in an environmental education model that intends to cope with local conservation problems, emphasizing the role of local and regional approaches and their interactions. Modified from Jacobson and Padua (1995). See text for details.

around parks as the local public and the city's residents as the regional public. Similarly, an international program to protect the biodiversity of the Chaco Region in South America may identify the local public as those people inhabiting conservation hotspot areas, whereas the regional public may be people in nearby countries or other continents who use the natural resources of the target areas. It is important to support interactive effects with very focused actions (e.g., cascade effects elicited by educators) such that the feedback between local and regional people is maintained in the long run.

One example (Fernández-Juricic 1999) of this model occurred in the province of Córdoba (Argentina), the southern limit of distribution of a locally endangered parrot, the blue-fronted Amazon (*Amazona aestiva*). Populations have been reduced by habitat destruction and overexploitation by the pet trade. An educational program sought to increase public awareness about the status of this parrot in the province of Córdoba, its conservation problems, and possible solutions. Two levels were involved: local, in small towns near the forests where the parrots live, and regional, in urban centers where they are sold as pets. Local activities

focused on changing attitudes toward the parrots so as to reduce the incidental capture of birds and support habitat protection. Regional efforts were aimed at explaining to city-dwellers the value of conserving wild species on the verge of local extinction and how the acquisition of parrots in pet shops could jeopardize the survival of wild individuals. The interaction between local and regional public established a basis to encourage protection of a locally endangered species by the commitment of different sectors of the society to cooperate in solving their problems (capture of wild individuals and pet trade). Of interest was the collaboration and student exchange between urban and rural education centers, increasing awareness of the conservation problems of each region. Moreover, locals wanted to cooperate in finding economically feasible alternatives to the extraction of parrots. The program became an alternative to isolated conservation endeavors developed for many regionally threatened species.

Education models including local and regional approaches can be applied to many conservation issues. The pet trade, for instance, is important worldwide, and many endangered species are imported illegally to international markets. To what degree is the general public in these international centers aware of the status of wild species and the consequences of acquiring and holding captive individuals? A recent preliminary survey in Madrid (an important European center for trade in tropical bird species) revealed that nearly 45% of people did not know that many exotic bird species sold in pet stores are threatened or endangered (Fernández-Juricic et al., in press). Once informed, almost 87% would prefer to stop buying these species. Interestingly, most of the people (84%) noted that information available through TV, radio, and newspapers was very scarce. The implications of such attitudes should be taken into account in conservation education programs that aim to protect species under pressures of commercialization. The inclusion of regional educational approaches in this case may diminish consumption rates in international centers, thereby reducing the demand for wild individuals at a local scale.

The combination of these educational approaches has been suggested by some authors (Bainbridge 1985, Haemig 1990, Ebert-May et al. 1992, Jacobson and Padua 1995, Stamp 1996). However, today, implementation appears scattered. Although many conservation education programs around the world

make some use of this 2-tiered perspective, there is need to articulate this approach when planning and designing programs. Also required are new alternatives for people to interact to accomplish synergistic effects. This model does not just promote top-down and bottom-up information flows; it calls for careful coordination of local and regional approaches to obtain better results. Its benefits could go further. Changing the conservation education view from isolated initiatives to a regional network of coordinated local programs could produce a powerful tool for conservation and wildlife management. The local-regional education approach offers an alternative way to convey conservation ideas to the people and is flexible enough for integration into already proposed approaches (Jacobson and Padua 1995, Feinsinger et al. 1997).

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