

Economics and Conservation in the Tropics:  
A Strategic Dialogue

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Scaling Up Economic  
Instruments for  
Biodiversity and  
Ecosystem Service  
Conservation in the  
Tropics

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## Scaling Up Economic Instruments for Biodiversity and Ecosystem Service Conservation in the Tropics

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Global conservation organizations are mainly consumers of expertise in economics. In this essay, I discuss the capacity gaps in economic analysis that prevent all conservation organizations from being more successful. This problem has some urgency because concern for climate change impacts has generated support for increased public investments to conserve natural systems in the tropics not seen since the Brundtland report (World Commission on Environment and Development 1987). Specific landscape management investments are widely recognized to be an efficient response to climate change mitigation and adaptation goals. Economic instruments that incorporate the costs of environmental externalities into private land-use decisions also hold great promise in guiding expansion of biofuel production, and avoiding irreversible losses from new infrastructure and commodity production (Chomitz 2007).

Unfortunately, although great strides have been made in the theoretical and practical use of economic instruments for achieving environmental outcomes in tropical landscapes, there are not enough sufficiently trained people to guide or monitor the implementation of these policy tools inside public, private, and NGO-sector institutions in key developing countries (Bonine 2003). There are many more organic farming certifiers than people who know why a forest reserve trading market would be a good thing and how a state government might establish one. Without knowledgeable, problem-solving practitioners, the legal and cultural barriers to the adoption of such tools means that we can easily lose this opportunity to harness the investments in conservation to the science of environmental economics. A large risk exists that instead of analytical tools becoming a “mainstream” element of economic development, clumsy trials of landscape conservation incentives could lead to another cycle of disillusionment over the prospects of wild nature surviving in the tropics.

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Organizations like the Conservation Strategies Fund (CSF 2007), supported by international NGOs, have sought to empower local environmental groups in tropical developing countries with analytic tools that can enable them to safeguard the survival of biologically rich and threatened places before they are overrun by the market externalities of rural development. Conservation economics has made significant advances, but the gap between efforts to build sustainable finance mechanisms and the institutions in distant cultures which can sustain their objectives will not be bridged without knowledgeable practitioners within these cultures, who understand the theory behind the economic incentive tools and are able to adapt their deployment to local contexts. Some of the underinvestment in this capacity is rooted in the sense of some practitioners that their scientific disciplines are disregarded when capacity needs are being considered.

### Misconceptions

The origin of the sense of disregard for economic capacity goes back a long way, but resentment has recently grown between conservationists and the economic and policy sciences (Fox 2006; Harris 2007). Some of this is based on common misperceptions of why the conservation organizations invest in certain kinds of capacity:

**Biological surveys are funded because they employ biologists to answer biological questions (such as “are there any new species?”).** This is almost never the real question motivating surveys. Conservation organizations know that when they finance surveys, new species will be found. The real question driving this work is this: what scientific fact, produced quickly and within a tight budget, can convince governments to set something aside in the advance of an imminent onslaught of deforestation or degradation driven by tourism, dam construction, roads, or biofuels? In fact, many conservation biologists detest the idea of deploying surveys only where an impending project requires some sort of survey. An entirely reactive approach could drive investments toward the redundant protection of species living in the path of giant development projects, while ignoring others that disappear quietly through more obscure processes.

**Conservationists enjoy being cartographers of crisis.** There is a perception that the conservation organizations like to produce colored maps with problem zones, such as hotspots (Conservation International), human footprints (Wildlife Conservation Society), and frontier forests (World Resources Institute). Moreover, conservation organizations seem to like to draw

conclusions about global distributions of problems based on datasets whose gaps cannot help but produce some artefactual results. Again, many scientists in conservation organizations are the world's most severe critics of these methods. These methods are repeatedly employed because policy mechanisms, such as the Global Environment Facility (GEF), require frameworks, such as its resource allocation framework (GEF 2005), that offer the funding institution protection from an appearance of arbitrariness. For public funding institutions, a necessary and often sufficient condition for investments to commence is the existence of a comprehensive and reproducible blueprint based on systematic quantification. In the 1990s, without the convergence of colored maps produced by the conservation organizations upon certain parts of Latin America, USAID could not allocate any money to them (BSP/CI/TNC/WCS/WRI/WWF 1995). With the maps, it could.

Obviously conservationists continue to use these techniques because they are effective in enabling conservation investments. There is also a continuing demand for emergency response science and for geographically comprehensive but superficial maps that list and repeatedly relist places at the top of emergency lists. This is particularly galling to economists, because priority targeting gives the illusion that wise allocation of scarce resources will occur – the core expertise of economics – while lacking a delivery mechanism that can efficiently use the resources to solve the problems identified.

**Conservationists harbor a deus ex machina illusion.** Conservationists are seen to be true believers in command and control measures. Government decision makers are expected to miraculously descend from the heavens to implement a landscape blueprint based on a map or optimization rule. Expectations of these regulatory miracles seem to be cherished and undeterred by evidence of the limited success of zoning schemes actually implemented (Chomitz 2006). Conservationists also seem to disdain alternatives to command and control instruments as morally suspect commoditization of nature, intended to eliminate all of nature that is not “paid for” through a market policy mechanism (McCauley 2006). While a few conservationists truly do perceive economic instruments in this way, they are not wrong in their reluctance to abandon opportunities for conservation through command and control. In 2005 and 2006 in Brazil, *anni mirabili* for Amazonian conservation, state and federal governments descended from the heavens to declare a Texas-sized space of new protected and indigenous areas according to blueprints from colored priority maps (WWF 2006).

Conservation scientists recognize that opportunities for command and control declarations will shrink relative to the demand for institutions that can actually manage rival claims to land and sea use. In the meantime, conservationists are rightly reluctant to divert resources that can avert imminent extinction into the costly research necessary to test the robustness of complex new policy mechanisms for enforcing land and sea use, especially if this means that the opportunity to “buy time” for the survival of fragile habitat is lost. Economic instruments are increasingly recognized as the future of policy implementation, but economists are thought to undervalue the benefit of time purchased for species to survive in the meantime, even if the policy mechanism is unsustainable. While pressures mount and emergencies continue to proliferate, conservationists need the policy sciences to galvanize new environmental investors interested in testing the robustness of new ecosystem management institutions.

### **Supply and Demand Side Obstacles: Misconceptions of Economists by Conservationists**

Brazilians say that if you roll a large cheese down the street, you know who is from the state of Minas Gerais because they are the ones who chase the cheese. In the experience of conservationists, you can identify the economists because they are the ones who start running if you roll a large dataset down the street. With a dearth of rich and reliable socioeconomic data related to conservation, this means that conservation has little to attract economists to the field. If there is no prospect of a large dataset, the academic economist will agree that large unobserved values are likely being excluded from market valuation, and then go on looking for large datasets. The attraction of rich datasets on sports, crime, war, and health currently seem to offer superior career opportunities to publish on economic behavior.<sup>1</sup>

This is part of the supply problem in building capacity. The economists needed by conservation efforts have a high opportunity cost for work on conservation issues. They also face reputational risk. David Simpson quotes Jerry Hausman saying that “environmental economics is to economics what military music is to music (Fisher 2005).” Economists do not respond well to

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<sup>1</sup> Paul Collier (2007) illustrates great creativity in finding datasets on the drivers of poverty in *The Bottom Billion*. The absence of datasets on the role of natural services to the poor in bottom billion countries apparently obstructs the analysis recommended by Dasgupta (2001).

an invitation from conservationists to play in a marching band. Without the datasets, however, this unfair portrayal of environmental economics is likely to persist.

For Brazilian students and others in Asia and Africa, there is also a demand-side problem. Unlike in the United States and Europe, where land trusts, state conservation programs, and corporations seeking council on environmental compliance and climate change policy risk, there is extremely limited demand for the skills we would have them learn.

The opportunity now exists to grow the capacity for the coming demand by creating conditions expanding both supply and demand for this capacity, on a common ground that is shared by conservation scientists and the policy sciences. There is great opportunity now to design proposals, in addition to resources the NGOs now need for emergency response, which propose to employ graduate students in the tropical developing countries in the sort of policy experiments to test economic instruments that would generate large datasets. Outside Australia, no evidence exists of how a market mechanism, intending to conserve habitat through a reverse auction, might actually function (Stoneham 2003). These experiments are only adequate for regions with legal institutions that make private property secure. In regions with communal management, experiments can also be designed to collect data on the performance of communally managed incentives for public good management. Like past policy experiments in the use of a negative income tax, these have the potential to clarify many debates by illuminating the counterfactual result of no intervention (Ferraro 2006).

Efforts to build the links among the three pillars of this strategy will not succeed unless they are rooted in the sustainable delivery of the capacity after the end of the funding cycle. These pillars of sustainable capacity building are:

- targeted conservation investments in trials of economic instruments (payments for environment services [PES] or PES-like incentives) to conserve ecosystem services and biodiversity;
- engagement of southern scientific institutions committed to building capacity in economic analysis and implementation of economic instruments; and
- collaboration from northern scientific institutions which are leaders in economic valuation and evaluation of the efficacy of alternative policies.

This implies the need to build partnerships in which there is true ownership by southern academic institutions and NGOs in the long-term development of this capacity. Within

conservation organizations themselves, support for this strategy will require better capacity of conservationists to understand the uses and limitations of economic analysis.

## Recommendations

Considering the gap in the incentives for supply and demand of economic capacity for conservation objectives, there are several approaches that might bridge this gap:

- **Build capacity from a sustainable base of academic institutions in countries of the tropics**, where there are strong policy scientists and strong environmental scientists, both with interests in applied environmental research.
- **Base the dissemination of capacity in southern universities**, serving many NGOs, supported by many northern academic institutions and NGOs.
- **Use the energy and hunger for field research learning opportunities** among students associated with associations of environmental economic learning including the South Asian Network for Development and Environmental Economics (SANDEE, <http://www.sandeeonline.org/>), Economy and Environment Program for Southeast Asia (EEPSEA, <http://www.idrc.ca/eepsea/>), Latin American and Caribbean Environmental Economics Program (LACEEP, <http://www.laceep.org/>), and their equivalent for Africa.
- **Avoid high overhead costs of northern universities** and the obligation to provide a learning experience for northern students. Partner with low-overhead national NGOs in the tropics with a record of scientific research (“think-and-do-tanks” described by the World Bank [2002]) and collaborations with universities and international NGOs respected for their natural science knowledge.
- **Build capacity that can support the objectives of conservation organizations**, but do not aim to house this capacity principally within them. Building the understanding of the links between the biophysical functions, human well-being, and the market instruments that might effectively conserve these values requires a scaling-up of activity that goes beyond the pilot projects currently supported by the international NGOs. Capacity building should prepare for national- and district-level implementation within government institutions, indigenous communities, and the

private sector which represents an entirely new sort of conservation enterprise in the tropics.



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