Comment on “Using ecological thresholds to evaluate the costs and benefits of set-asides in a biodiversity hotspot”

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Banks-Leite et al. (Reports, 29 August 2014, p. 1041) conclude that a large-scale program to restore the Brazilian Atlantic Forest using payments for environmental services (PES) is economically feasible. They do not analyze transaction costs, which are quantified infrequently and incompletely in the literature. Transaction costs can exceed 20% of total project costs and should be included in future research.

Banks-Leite et al. assess the economic cost of a program to restore priority landscapes in the Brazilian Atlantic Forest to 30% forest cover (1). They include the costs of fieldwork and of payments for environmental services (PES), but not transaction costs. This reflects both the lack of reliable data on the Atlantic Forest and a broader gap in the PES literature. The authors conclude that such a program would be economically feasible. The economic logic of PES is compelling, but a clear understanding of transaction costs is needed before we can conclude that PES is cost-effective at either the pilot scale or the large scale the authors envision.

PES are a mechanism to internalize environmental externalities, an approach that can be more efficient than other policy instruments, first proposed by Coase (2). Coase emphasized the importance of transaction costs: PES can increase welfare only if the value of services gained by beneficiaries is greater than the combined value of the transaction cost and the opportunity cost to service providers. To illustrate, if a water utility saves US$6 per year in water-treatment costs for each acre of upstream forest conserved, and upstream ranchers have net profit of US$4 per year for the same acres, a contract in which the utility pays a rancher US$5 per acre conserved per year will benefit both parties, but if the transaction cost is US$3 per acre per year, there is no payment level that increases overall welfare.

The most complete review (3) to quantify transaction costs reports relatively high startup transaction costs (the equivalent of 10 years of PES payments in some cases) and much lower recurrent transaction costs (roughly equivalent to the annual payment amount in many cases). Even that study, however, reported insufficient data for at least 6 of 13 cases (3). This is true even of exemplary projects such as Vittel, where the transaction costs of public partners could not be quantified (4). Fonaffio, in Costa Rica, is the only large-scale PES program to have specified transaction costs in the literature: Government transaction costs are limited to 7% of total program cost, and landowners bear costs of 12 to 18% of PES (5).

Transaction costs have not been studied in PES projects in the Atlantic Forest, and even detailed economic analyses do not quantify transaction costs (6). The case studies used by Banks-Leite et al. provide very limited information on transaction costs (7). Gray literature on transaction costs is wide ranging. The authors envision.

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Brazil’s Atlantic Forest, several unanswered ques-
tions deserve attention:

1) What are the full transaction costs of ex-
isting PES initiatives?

2) Costa Rica’s Fonafifo, which operates at
scale, reports transaction costs of 19 to 25% of
total project costs. Can economies of scale sub-
stancially reduce transaction costs in the Atlan-
tic Forest?

3) Some authors point to the newness of
PES as a source of high transaction costs. Can
identifying and disseminating good practices
reduce start-up transaction costs?

4) Other conservation mechanisms also have
transaction costs. How do those differ from PES
transaction costs?

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