

Forests and biodiversity: an alternative view
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Introduction: Latin America faces a number of major environmental challenges, and Sedjo focuses on one of these: forest biodiversity. Population growth and increasing demand for resources have put particular pressure on tropical forests, and their conservation remains significantly under-funded.

The context: Sedjo gives a thorough and balanced review of biodiversity in general and rates of loss in Latin America in particular. Fortunately, the predictions made two decades ago about the loss of thousands of species have not been realized, but this gives no grounds for complacency.

Although the author acknowledges the poor state of knowledge on costs and benefits of conservation, he is optimistic about the prospects of a global carbon market supporting conservation efforts via payments for sequestration. One element that is missing from Sedjo's analysis is the institutional changes that would be necessary to convince forest owners to move from their current orientation to timber production to one that emphasizes carbon storage and provision of other ecosystem services. In practice, gains from a carbon market are likely to be smaller.

Measuring the non-use benefits of biodiversity conservation: While the paper estimates the benefits of conservation on the basis of ecosystem services, non-use values should also be considered. In some cases they may well exceed the use values.

For example, in a contingent valuation method study in the USA in 1992, the mean willingness to pay into a UN-managed fund to protect 5% of the world's rainforests was \$26 per household, or more than \$1.9 billion for the whole country. A similar study in Europe in 1999 gave a mean willingness to pay of \$46 per household to protect 5% of the Brazilian rainforest, or \$1.8 billion for all households in the UK and Italy. This suggests a large social valuation for non-use benefits in OECD countries.

Alternative solution – expanding or improving protected areas: Protected areas or parks are one of the best ways to conserve ecosystems sufficiently to ensure stable biodiversity. Seventeen percent of land in the region is nominally under protection, but often this is not enforced. An alternative proposal is to add 5% of land to the protected system, or properly implement conservation for 5% which is already under nominal protection. Using the European willingness to pay study as an estimate of benefits, and a one-time cost of \$500 per hectare to take forest out of production, we find a benefit-cost ratio of 2.5 for a 4% discount rate, for non-use benefits for two European countries alone. This solution could be implemented using international cost-sharing mechanisms.

Conclusions: Sedjo makes a good case for the protection of biodiversity generating significant net social benefits, based primarily on the emergence of carbon markets. However, significant non-use benefits imply that greater biodiversity conservation can be economically justified even without the advent of large scale carbon markets