

SCB-ES contribution to TEEB Call for Evidence for Phase II

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D0 section 1: Relation between biodiversity, ecosystems and their services

This section may be similar to chapter 2 of the TEEB interim report. In the interim report human population growth and consumption “patterns” were mentioned (pg. 19) but were not placed in the context that is essential for understanding the economics of biodiversity conservation. Furthermore, growth and consumption were treated as givens rather than problems that must be addressed.

Subsequent TEEB reports should acknowledge and be explicit that (1) increases in the human population and per capita rates of consumption of materials, which combined constitute economic growth (i.e., increasing GDP), are the ultimate causes of biodiversity loss, and (2) there is an inherent and unavoidable trade-off between economic growth and biodiversity conservation (Czech et al. 2002; Trauger et al. 2003; Brown and Laband 2006; Clausen and York 2008a, 2008b).

More appropriate valuation of biodiversity is a good first step, but it will be necessary as a next step to change the current economic paradigm and system as a precondition for sustainability.

The interim report also mentioned “emerging recognition of global ecological constraints” and ecological tax reform (pg. 25), but it stopped short of acknowledging limits to growth. It conveyed the inaccurate win-win rhetoric that “cutting demand for ecological resources... may even add growth opportunities to the economy” (pg. 25). Furthermore, it touted “technological and organizational solutions that reduce human demand on nature.” Czech’s (2008) paper refutes the argument that we can rely on technological progress as a sufficient solution.

D0 section 2: Measuring biophysical quantities, and the use of indicators

Dietz et al. (2007) is a good, new reference in the ecological footprint literature.

D0 section 3: Assessment framework

This section may be similar to chapter 3 of the TEEB interim report, which raised several topics relevant to ecological economics. The topics included alternatives to GDP for national income accounting (pg. 31), “the ethical question about the extent to which some life-supporting functions of biodiversity can be fully addressed by economic valuation and be considered as part of possible trade-offs instead of being dealt with as ecological constraints” (pg. 35), and

biodiversity conservation requiring “use restrictions which lead to opportunity costs from foregone economic development” (pg. 38).

Rosales (2006) provided specific guidance on the use of tradeable permit policies for biodiversity conservation. Ingrahama and Gilliland Foster (2008) helped show that there are substantial opportunity costs to developing conservation lands, so opportunity costs are not associated only with “use restrictions” and “foregone economic development.”

TEEB’s interim report concluded that the expectation of growth leads to discounting and thus undervaluation of current resources (pg. 31). Proper valuation (precautionary end), therefore, would need to count on no growth or negative growth in order to attribute a proper value to current resources, including biodiversity.

Under the proposed valuation framework (Figure 3.4, pg. 39), the effect on GDP is a metric by which policy options are evaluated rather than a metric of the fundamental problem. One of the “key elements” of the proposed valuation framework is to “Examine the causes of biodiversity loss” (pg. 40), which provides another opportunity for citing Brown and Laband (2006), Clausen and York (2008a, 2008b), and Czech et al. (2002).

Ecology and economics should be much more equal partners in TEEB. Ecologists should not simply provide data for economists to apply using their concepts, tools, and models. Socio-economic systems are subsystems within the finite biophysical world, for which ecologists have alternative concepts, tools, and models, which may be more useful or relevant, especially when investigating biodiversity and the implications to people of continuing to lose biodiversity at a rapid rate.

References Cited

- Brown, R. M., and D. N. Laband. 2006. Species imperilment and spatial patterns of development in the United States. *Conservation Biology* 20:239-244.
- Clausen, R., and R. York. 2008a. Economic growth and marine biodiversity: influence of human social structure on decline of marine trophic levels. *Conservation Biology* 22:458-466.
- Clausen, R., and R. York. 2008b. Global biodiversity decline of marine and freshwater fish: a cross-national analysis of economic, demographic, and ecological influences. *Social Science Research* 37(4):1310–1320.
- Czech, B. 2008. Prospects for reconciling the conflict between economic growth and biodiversity conservation with technological progress. *Conservation Biology* 22(6):1389–1398.
- Czech, B., P. R. Krausman, and P. K. Devers. 2002. Economic associations among causes of species endangerment in the United States. *BioScience* 50:593–601.

Dietz, T., E. A. Rosa, and R. York. 2007. Driving the human ecological footprint. *Frontiers in Ecology and the Environment* 5:13-18.

Ingrahama, M. W., and S. Gilliland Foster. 2008. The value of ecosystem services provided by the U.S. National Wildlife Refuge System in the contiguous U.S. *Ecological Economics* 67(4):608-618.

Rosales, J. 2006. Economic growth and biodiversity loss in an age of tradeable permits. *Conservation Biology* 20(4):1042-1050.

Trauger, D. L., B. Czech, J. D. Erickson, P. R. Garrettson, B. J. Kernohan, and C. A. Miller. 2003. The relationship of economic growth to wildlife conservation. Technical Review 03-1. The Wildlife Society, Bethesda, Maryland, USA. 22 pp.