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Peer reviewed

**Review: Nature's Numbers: Expanding the National Economic Accounts to Include the Environment.**

By William D. Nordhaus and Edward C. Kokkelenberg, editors

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Nordhaus, William D. and Kokkelenberg, Edward C., Editors. *Nature's Numbers: Expanding the National Economic Accounts to Include the Environment*. Washington, D.C.: National Academy Press, 1999. 250 pp. US\$44.95, hard cover. ISBN: 0-309-07151-8.

The National Academy of Sciences undertakes a review of environmental accounting with the results presented in *Nature's Numbers: Expanding the National Economic Accounts to Include the Environment*. Identifying and assessing "value" for nonmarket accounts such as air and water quality, biodiversity, health, enjoyment of the natural environment, and other environmentally related concepts is a difficult task at best. However, *Nature's Numbers* takes on the challenge and does a respectable job dealing with somewhat abstract concepts of incorporating environmental value into the national "balance sheet." In fact, this book is quite revolutionary, given that previously neglected or inaccurately identified "nonmarket" environmental resources and/or costs should and can be more clearly valued in a tangible economic form.

The book begins with a fairly technical assessment of various accounting methods used for environmental resources. It compares and contrasts methods, targeting key strengths and weaknesses. For example, the Bureau of Economic Analysis (BEA) currently uses five valuation methods for assessing subsoil mineral resources, none of which is identified as a standardized or preferred method. Critical to correct valuation of any natural resources are accurate data, which in many cases has to be inferred or is lacking. It is recommended that the BEA maintain significant efforts to improve accounting techniques for domestic mineral assets. An improved accounting system of national resources would allow policy makers to better assess trends in resource scarcity, and thus more effectively manage these resources. Better policies could improve chances that future generations will not be lacking vital resources as a result of today's mismanagement. Other countries' techniques for accounting environmental resources are also examined.

The chapter, "Accounting for Renewable and Environmental Resources," deals with determining interactions between natural resources, the environment, and economic activity. A main point is that this interaction of environmental

variables can affect economic well being both directly and indirectly. For example, fossil-fuel-generated urban smog can result in negative health effects, reduced visibility, interference with recreational activities, affected crop growth, etc., all of which ultimately can have negative economic impacts. Traditional accounting methods would not identify these additional potential costs of urban smog associated with fossil fuel use. Such non-comprehensive accounting systems may lead to incorrect evaluations of the economic cost/benefit of using certain environmental resources. Is solar generated electricity really more expensive than fossil fuel generated electricity if a more comprehensive accounting system is used? These are just a few of the questions the book stimulates.

*Nature's Numbers* advocates incorporating the environment into the national accounting system by improving data collection, expanding accounting concepts, and bringing nonmarket accounts into the balance sheet. It critically reviews current accounting concepts and explores alternatives. How do you measure the value of a clean beach? What is a reduction in value of national assets due to air pollution? These are important questions. Considering the virtual absence of the environment in accounting at national and corporate levels (with the exception of mandated regulatory costs) in the past, this book sets the stage for new perspectives in valuing and preserving our precious natural environment and resources.

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