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## Environmental Planning: An Economic Analysis

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# *Environmental Planning: an Economic Analysis*

By

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Praeger Publishers, 1972, Pp. 155, price unknown.

With the recent passage of the Coastal Zone Management Act of 1972, a handbook on economic analysis for the coastal zone could be very relevant to planners and public administrators. The Act calls for State officials to develop management programs which ensure the appropriate use of coastal zone resources in light of the tradeoffs among ecological, cultural, historic, aesthetic, and economic development values. Consequently, the promise of the authors to show how economic analysis is relevant to non-pecuniary management decisions in the coastal zone is an exciting prospect.

The first major section of the book describes a conceptual economic framework, (1) for estimating the change in total regional income and in total environmental quality resulting from growth in a region and (2) for determining the willingness of regional inhabitants to pay for improvements in environmental quality. The framework for estimating total change in regional income and environment is a modification of Isard's "economic-ecologic" construct.<sup>1</sup> The authors simplify the Isard construct by directly attaching to the economic input-output model coefficients of pollution generation, a procedure which allows them to abandon the ecologic input-output model. They focus on pollutant discharge, for example, BOD, SO<sub>2</sub>, etc. as negative imports to the region rather than on the impact of pollutants on the environment, such as changes in fish population or human health. The framework for determining willingness to pay is a series of hypotheses which would explain variations in the amount individuals are willing to pay for clean air and clean water. The authors recommend household surveys as the preferred procedure for collecting data on the willingness to pay. The authors integrate the two pieces of their conceptual framework by stating that the supply price, generated by the input-output model and the demand price, based on willingness to pay, would give the planner and public administrator some insight into the correct balance between development and levels of environmental quality in the coastal zone.

The second major section of the book is a report on the efforts to implement empirically the conceptual framework for the Charleston, South Carolina metropolitan area. The section describes how the authors calculated the economic-ecologic linkages in the region and

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1. W. Isard, *Some Notes on the Linkage of the Ecologic and Economic System*, in *22 Regional Science Association Papers* 86-87 (1969).

the willingness to pay for clean air and clean water. Perhaps, the most interesting empirical result is that the textile and apparel industry will generate more than 70 percent of the increase in income and only 2 percent or less of the increase in emitted residuals by 1980 at the same time that chemical manufacturing will generate about 13 percent of the increase of income, but 92 percent of the expected increase in atmospheric sulfur dioxide. In addition, the latter type of industrial activity is worth only 25 percent of the willingness to pay to prevent air quality from causing a threat to health.

While the authors present an interesting concept, I seriously doubt for several reasons if their work would be useful as a "handbook for planners and public administrators," who are their primary audience.

First, the authors identified three very significant policy problems in managing coastal zone resources "(1) To what use or combination of uses is the coastal zone to be devoted? (2) What individuals or firms will be allowed to engage in these uses? (3) Who will administer the allocation of coastal resources among the various uses?" The authors did not address in any systematic way the last two questions and while the thrust of their book was aimed at the first question, they did not directly address the most pressing land use issue in the coastal zone—the appropriate mix of uses between preservation and development.

Second, the authors shirked one of the most difficult problems facing planners and public administrators in the environmental field. Planners and administrators need to know how to relate the amount of pollutant or residuals generated to their impact on the ecosystem, public health, and public welfare. Quantities of pollutants, such as BOD or particulates, are truly pollutants only if they exceed health standards, destroy fish life or eliminate recreation possibilities. The authors shirked the issue by eliminating the ecological input-output model and substituting the amount of residual generation as the final environmental measure. Occasionally, the authors are forced to acknowledge the importance of ecologic or public health and welfare factors in their discussion of willingness to pay.

Third, the authors will only confuse most planners and administrators with their unsystematic presentation of economic terms. The authors introduce the term environmental good, as central to their analysis and compare it very superficially with the concepts of common property resources, externalities, and public goods. Their discussion of the economic terms adds very little to their concept of environmental good and adds virtually nothing to the remainder of the book.

In summary, I think that the authors fail to show with sufficient

detail and clarity how economic models would be relevant to coastal zone management decisions, which planners and public administrators must make in implementing the new legislation. In fact, the book appears to be a collection of data about an area, which just happens to lie within the coastal zone, in search of a theory which it never finds.

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