Jan J. Boersema, Lucas Reijnders, *Principles of Environmental Sciences*

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This edited volume is designed to provide a comprehensive, multidisciplinary introduction to environmental sciences for undergraduate and graduate students. Central to the book is an emphasis on the theme of sustainability as a concept for guiding understanding and action with respect to the environment. This is reflected in the emphasis on life-cycle analysis and integrated assessment. On balance, the book is uneven but still useful as an introductory text. Some chapters are strong, while others fail to make a substantial contribution. This is not altogether surprising for an edited text consisting of 28 chapters that is the product of 37 contributors.

The book is organized into three sections: (1) stating the problem, (2) principles and methods, and (3) context and perspectives. Written as a basic textbook, *Principles of Environmental Sciences* assembles contributions from American and European scholars. One of its unique features is a conscious effort to draw together insights from the life sciences and social sciences in order to highlight the interaction between the environment and anthropogenic factors through a combination of case studies and examples. A number of the authors, such as David Pimentel or Herman Daly, are senior experts in their respective fields, and the resulting chapters are noteworthy for their clarity.

Most of the material on environmental science as well as recent developments and trends in the opening

section will be familiar to those who have a background in ecology, the physical or life sciences, and environmental policy. The chapters on environmental history offer a perspective on the cultural and societal dimensions of environmental problems and probably will be new for many readers, especially students with limited prior exposure to the literature on environmental history and ethics.

The opening chapters of Part II give a fairly standard summary of basic principles from the physical and life sciences. The chapter by Dilworth briefly defines topics, such as conservation of energy, entropy, and systems. The companion chapter by Reijnders offers a similarly terse overview of presumably guiding principles, while conceding the relationship between science, technology, and environmental problems is complex. The remaining chapters in this section offer an introduction to selected analytical techniques and methodological issues. Overall, this section focuses on aspects of modeling and integrated assessment.

Part III combines case studies with a series of chapters offering philosophical arguments. The chapter by Cohen provides a good overview of comparative environmental policy. Similarly, the exchange between Daly and Hueting offers valuable insights into how the debate over the role of subjective preferences and objective value. The chapter by Zoeteman similarly illustrates how one might apply an integrated framework to assess sustainable development cross-nationally.

In summary, *Principles of Environmental Sciences* contains some shortfalls but is a solid textbook. It is best suited for use by undergraduates as an introduction to the field and would have more limited appeal to graduate student audiences or as a reference.

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