

高等院校双语教学适用教材

经济学

Environmental Economics

An Introduction

Fifth Edition

Barry C. Field Martha K. Field

环境经济学

(第5版)

〔美〕

巴利·C.菲尔德 玛莎·K.菲尔德 著

原毅军 陈艳莹 译注



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出版者的话

当前，在教育部的大力倡导下，财经和管理类专业的双语教学在我国各大高校已经逐步开展起来。一些双语教学开展较早的院校积累了丰富的经验，同时也发现了教学过程中存在的一些问题，尤其对教材提出了更高的要求；一些尚未进入这一领域的院校，也在不断探索适于自身的教学方式和方法以及适用的教材，以期时机成熟时加入双语教学的行列。总之，对各类院校而言，能否找到“适用”的教材都成为双语教学成功与否的关键因素之一。

然而，国外原版教材为国外教学量身定做的一些特点，如普遍篇幅较大、侧重于描述性讲解、辅助材料（如习题、案例、延伸阅读材料等）繁杂，尤其是许多内容针对性太强，与所在国的法律结构和经济、文化背景结合过于紧密等，却显然不适于国内教学采用，并成为制约国内双语教学开展的重要原因。因此，对国外原版教材进行本土化的精简改编，使之变成更加“适用”的双语教材，已然迫在眉睫。

东北财经大学出版社作为国内较早涉足引进版教材的一家专业出版社，秉承自己一贯服务于财经教学的宗旨，总结自身多年的出版经验，同麦格劳—希尔教育出版公司、培生教育出版集团和圣智出版集团等国外著名出版公司通力合作，在国内再次领先推出了会计、工商管理、经济学等专业的“高等院校双语教学适用教材”。这套丛书的出版经过了长时间的酝酿和筛选，编选人员本着“品质优先、首推名作”的选题原则，既考虑了目前我国财经教育的现状，也考虑了我国财经高等教育所具有的学科特点和需求指向，在教材的遴选、改编和出版上突出了以下一些特点：

- 优选权威的最新版本。入选改编的教材是在国际上多次再版的经典之作的最新版本，其中有些教材的以前版本已在国内部分高校中进行了试用，获得了一致的好评。
- 改编后的教材在保持英文原版教材特色的基础上，力求内容精要，逻辑严密，适合中国的双语教学。选择的改编人员既熟悉原版教材内容，又具有本书或本门课程双语教学的经验。
- 改编后的教材配有丰富的辅助教学支持资源，教师可在网上免费获取。
- 改编后的教材篇幅合理，符合国内教学的课时要求，价格相对较低。

本套教材是在双语教学教材出版方面的一次新的尝试。我们在选书、改编及出版的过程中得到了国内许多高校的专家、教师的支持和指导，在此深表谢意，也期待广大读者提出宝贵的意见和建议。

尽管我们在改编的过程中已加以注意，但由于各教材的作者所处的政治、经济和文化背景不同，书中的内容仍可能有不妥之处，望读者在阅读中注意比较和甄别。

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Preface

When our descendants look back at the last part of the 20th century, and now at the beginning of the 21st, we want them to be able to say: "That's when they began to take the degradation of the natural environment, with its threats to human life and the life of the planet, seriously." Furthermore, we would like them to be able to see that around this time we took serious steps to halt and reverse this process. This book is an introduction to environmental economics, one way of approaching the steps that need to be taken. It's about the way human decisions affect the quality of the environment, how human values and institutions shape our demands for improvement in the quality of that environment, and, most especially, about how to design effective public policies to bring about these improvements.

Problems of environmental quality are not something new; in fact, history is filled with bleak examples of environmental degradation, from deforestation by ancient peoples to mountains of horse manure in urban areas in the days before automobiles. But today's world is different. For one thing, many people in economically developed countries, having reached high levels of material well-being, are beginning to ask questions: What good is great material wealth if it comes at the cost of large-scale disruptions of the ecosystem by which we are nourished? More fundamental, perhaps, is the fact that with contemporary economic, demographic, and technological developments around the world, the associated environmental repercussions are becoming much more widespread and lethal. What once were localized environmental impacts, easily rectified, have now become widespread effects that may very well turn out to be irreversible. Indeed some of our most worrisome concerns today are about global environmental impacts.

It is no wonder, then, that the quality of the natural environment has become a major focus of public concern. As we would expect, people have responded in many ways. Environmental interest groups and advocates have become vocal at every political level, especially in those countries with open political systems. Politicians have taken environmental issues into their agendas; some have sought to become environmental statespersons. Environmental law has burgeoned, becoming a specialty in many law schools. Thousands of environmental agencies have appeared in the public sector, from local conservation commissions to environmental agencies at the United Nations. At the scientific level environmental problems have become a focus for chemists, biologists, engineers, and many others. And within economics there has developed *environmental economics*, the subject of this book.

Environmental economics focuses on all the different facets of the connection between environmental quality and the economic behavior of individuals and groups of people. There is the fundamental question of how the economic system shapes economic incentives in ways that lead to environmental degradation as

well as improvement. There are major problems in measuring the benefits and costs of environmental quality changes, especially intangible ones. There is a set of complicated macroeconomic questions: for example, the connection between economic growth and environmental impacts and the feedback effects of environmental laws on growth. And there are the critical issues of designing environmental policies that are both effective and equitable.

The strength of environmental economics lies in the fact that it is analytical and deals with concepts such as efficiency, trade-offs, costs, and benefits. Many believe strongly that the times call for more direct political action, more consciousness-raising, more political organizing, and, especially, more representation and influence of environmental interests on the political scene. Nobody can doubt this. We live in a complicated world, however, where human problems abound; domestically we have health care, drugs, education, violence, and other critical issues, all competing for attention and public resources. Throughout the world, vast numbers of people struggle to alter their political and economic institutions, develop their economies, and raise their material standards of living.

In these settings, just raising the political heat for environmental issues is necessary but not sufficient. We have to get hard scientific results on how people value environmental quality and how they are hurt when this quality is degraded. We also have to put together environmental policy initiatives that get the maximum impact for the economic and political resources spent. This is where environmental economics comes in. It is a way of examining the difficult trade-off types of questions that all environmental issues entail; it is also a valuable means of inquiring why people behave as they do toward the natural environment, and how we might restructure the current system to rectify harmful practices.

In fact, the subject is important enough to deserve to be widely available to the nonspecialist. Economics is a discipline that has developed a sophisticated body of theory and applied knowledge. Courses in economics now follow a hierarchy of introductory- and intermediate-level principles that are designed to lead students along and prepare them for the more advanced applications courses. But these run the risk of closing off the subject, making it inaccessible to those who do not want to become specialists. This book is intended, instead, for people who have not necessarily had any economics courses, at least not yet. It was written on the assumption that it's possible to present the major principles of economics in a fairly commonsensical, although rigorous, way and then apply them to questions of environmental quality.

This book is an introduction to the basic principles of environmental economics as they have been developed in the past and as they continue to evolve. The real world, certainly the real world of environmental policy, is much more complicated than these principles would often seem to imply. The examples discussed represent only a sample of the full range of issues that actually exists. If and when you confront that real world of environmental politics and policy, you will find it necessary to adapt these principles to all the details and nuances of reality. Unfortunately, there is not enough space in one book to look at all the

ways that environmental economists have found to make the basic concepts and models more specific and relevant to concrete environmental issues. So we stick to the basic ideas and hope they excite your interest enough to make you want to pursue the refinements and adaptations of these ideas as they relate to a subject of growing relevance and importance.

When the first edition was published, there was no way of knowing how many others might be teaching a course similar to the one from which the book sprang: a course in environmental economics for people who have not necessarily had a course in economics. The reception that the first four editions have had, therefore, is gratifying. The comments received, sometimes directly and sometimes via the grapevine, have in general been quite positive. We hope the fifth edition will be as well received.

The basic structure and sequence of chapters are unchanged. The first section of the book is an introduction, beginning with a chapter on what environmental economics is about, followed by one on the basic relationships between the economy and the environment. The next section is devoted to studying the “tools” of analysis, the principles of demand and cost, and the elements of economic efficiency both in market and nonmarket activities. These chapters are not meant to be completely thorough treatments of these theoretical topics; however, given the objective of the book, the introductory chapters are essential. Even those who have had a course in microeconomic principles might find them valuable for purposes of review. Section Two also contains a chapter in which these economic principles are applied to a simple model of environmental pollution control. In these chapters, as well as the others, we have tried to leaven the presentation with examples taken from current sources, such as newspapers.

Section Three is on environmental analysis. Here we look closely at some of the techniques that have been developed by environmental economists to answer some of the fundamental value questions that underlie environmental decision making. We focus especially on the principles of benefit–cost analysis. After this we move to Section Four, on the principles of environmental policy design. It begins with a short chapter dealing with the criteria we might use to evaluate policies, then moves on to chapters on the main approaches to environmental quality management.

Sections Five and Six contain policy chapters, where we examine current developments in environmental policy with the analytical tools developed earlier. Section Five is devoted to environmental policy in the United States, covering federal policy on water, air, and toxic materials. It also contains a chapter on environmental issues at the state and local levels. Finally, the last section looks at international issues, such as environmental policy developments in other countries, global environmental issues, including global warming, and the economics of international environmental agreements.

The fifth edition maintains the original structure of the book, but contains much new material. Many of the exhibits, and numerous tables, have been changed, and data tables and figures have been updated. New references have been added to reflect research efforts by environmental economists over the last

few years. The fifth edition contains new material on various aspects of global warming (Chapters 1, 6, and 20); emission trading programs, including carbon trading (Chapters 1, 13, and 15); green taxes (Chapter 12); markets for green goods (Chapter 10); coastal water pollution (Chapter 14); valuing health outcomes (Chapter 7); the value of private information in policy plans (Chapter 9); the economics of pest resistance (Chapter 16); and the use of charges in solid waste (Chapter 17).

In this edition, a collection of relevant Web links and additional sources are available on the Web site. Also available is a tutorial for working with graphs. For instructors, the Web site offers a completely revised Instructor's Manual available for easy download. To access the Web site associated with this book, please see www.mhhe.com/field5e.

Acknowledgments

This text is the result of teaching the subject for many years in the classroom, so first we want to thank all those students through the years who have listened, asked questions, and provided the feedback that shaped the book. Many people have helped review and shape previous editions of the book. For the fifth edition, thanks to Linda T. M. Bui of Brandeis University; Derek Kellenberg of University of Montana; Quentin Duroy of Denison University; Tamara Bertelsen of Arapahoe Community College; Leila J. Pratt, Hart Professor of Economics at University of Tennessee at Chattanooga; Paul Comolli of University of Kansas; Darrin V. Gulla of Gatton College of Business and Economics, University of Kentucky; William Waller of Hobart and William Smith Colleges; Eugenie Bietry of Pace University, Dyson College; George D. Santopietro of Radford University; Jay Shimshack of Tufts University; Willis Lewis, Jr., of Lander University; Bob Cunningham of Alma College; Heather H. Kohls of Marquette University; Chris Azevedo of the University of Central Missouri; Marcia S. Snyder of the College of Charleston; and Tom Stevens and John Stranlund of the University of Massachusetts.

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And finally, thanks to Tory, Sidney, and Leslie for your support, thoughts, and love.

Barry C. Field

Martha K. Field

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