

Natural Resource And Environmental Economics

A comprehensive dictionary of environmental economics, compiled by leading academics in the field. Each expression or phrase is explained clearly in non-technical language, with references given to its use in the growing literature on the subject area. From abatement to zonal travel cost method (ZTCM), there are over 1000 cross-referenced entries covering topics such as: environmental instruments for policy-making, techniques applied in environmental and natural resource economics, major issues in environmental economics and environmental management, economics of sustainable development, natural resource accounting, and international environmental agreements. As well as providing incisive answers to questions such as 'What is natural capital?' or 'when are crowding diseconomies important?', the dictionary includes a list of commonly used acronyms and abbreviations, and a complete bibliography detailing the major texts in the field is provided.

As Thomas Sterner points out, the economic 'toolkit' for dealing with environmental problems has become formidable. It includes taxes, charges, permits, deposit-refund systems, labeling, and other information disclosure mechanisms. Though not all these devices are widely used, empirical application has started within some sectors, and we are beginning to see the first systematic efforts at an advanced policy design that takes due account of market-based incentives. Sterner's book encourages more widespread and careful use of economic policy instruments. Intended primarily for application in developing and transitional countries, the book compares the accumulated experiences of the use of economic policy instruments in the U.S. and Europe, as well as in select rich and poor countries in Asia, Africa, and Latin America. Ambitious in scope, the book discusses the design of instruments that can be employed in a wide range of contexts, including transportation, industrial pollution, water pricing, waste, fisheries, forests, and agriculture. Policy Instruments for Environmental and Natural Resource Management is deeply rooted in economics but also informed by perspectives drawn from political, legal, ecological, and psychological research. Sterner notes that, in addition to meeting requirements for efficiency, the selection and design of policy instruments must satisfy criteria involving equity and political acceptability. He is careful to distinguish between the well-designed plans of policymakers and the resulting behavior of society. A copublication of Resources for the Future, the World Bank, and the Swedish International Development Cooperation Agency (Sida).

This book, based on lectures on natural and environmental resource economics, offers a nontechnical exposition of the modern theory of sustainability in the presence of resource scarcity. It applies an alternative take on environmental economics, focusing on the economics of the natural environment, including development, computation, and potential empirical importance of the concept of option value, as opposed to the standard treatment of the economics of pollution control. The approach throughout is primarily conceptual and theoretical, though empirical estimation and results are sometimes noted. Mathematics, ranging from elementary calculus to more formal dynamic optimization, is used, especially in the early chapters on the optimal management of exhaustible and renewable resources, but results are always given an economic interpretation. Diagrams and numerical examples are also used extensively. The first chapter introduces the classical economists as the first resource economists, in their discussion of the implications of a limited natural resource base (agricultural land) for the evolution of the wider economy. A later chapter returns to the same concerns, along with others stimulated by the energy and environmental "crises" of the 1970s and beyond. One section considers alternative measures of resource scarcity and empirical findings on their behavior over time. Another introduces the modern concept of sustainability with an intuitive development of the analytics. A chapter on the dynamics of environmental management motivates the concept of option value, shows how to compute it, then demonstrates its importance in an illustrative empirical example. The closing chapter, on climate change, first projects future changes and potential catastrophic impacts, then discusses the policy relevance of both option value and discounting for the very long run. This book is intended for resource and environmental economists and can be read by interested graduate and advanced undergraduate students in the field as well.

The purpose of this collection of readings is to aid the student taking a course in environmental economics to place the issues in perspective. The text is designed for an undergraduate audience, and those readings that have appeared elsewhere have, with the permission of the holders of the copyright, been suitably abridged for this purpose. The book is designed to be used in conjunction with a conventional text on environmental economics or as an adjunct to a comprehensive series of lectures in environmental and natural resource economics.

How can we design environmental policy that achieves ambitious ecological goals without burdening society with excessive costs? How can effective international agreements, for example, on global warming, be designed? This textbook discusses issues such as these in an intelligible manner for students. The book uses little mathematical analysis, relying on verbal and graphical analysis.

Reduction of poverty is a tremendous and persistent challenge for the global community. Given that the livelihood of millions is at stake, there is an urgent need to reconsider the causes of and the remedies for poverty. Poverty and its reduction are closely linked to the natural-resources base. The quality and bounty of the local environment certainly affect living conditions of the poor and their poverty is often seen as a contributing factor to the degraded condition of the local environment. Teasing apart the direction of causality in this resource–poverty nexus is a serious empirical challenge. This book contributes to an improved understanding of the economic dimensions of environmental and natural-resource management and poverty alleviation. The ten chapters of the book offer an overview of the current knowledge concerning the relation between poverty, environment and natural-resource use. Three sides of the debate receive particular attention. First, the relation between resource use and poverty is discussed from a theoretical point of view. Second, it is questioned whether payments for environmental services or considering values of resources can be an effective tool for stimulating both sustainable resource use and poverty alleviation. Third, alternative strategies to break the land degradation–poverty cycle are discussed.

Natural Resources and the Environment: Economics, Law, Politics, and Institutions provides a new approach to the study of environmental and natural resource economics. It augments current contributions from the fields of public choice, law, and economics, and the burgeoning field of what used to be called the "New Institutional Economics," to describe, explain, and interpret how these new developments have been applied to better understand the economics of natural resources and the environment. This textbook takes a multi-disciplinary approach, which is essential for understanding complex environmental problems, and examines the issue from not only an economic perspective, but also taking into account law, politics, and institutions. In doing so, it provides students with a realistic understanding of how environmental policy is created and presents a comprehensive examination of real-world environmental policy. The book provides a comprehensive coverage of key issues, including renewable energy, climate change, agriculture, water resources, land conservation, and fisheries, with each chapter accompanied by learning resources, such as recommended further reading, discussion questions, and exercises. This textbook is essential reading for students and scholars seeking to build an interdisciplinary understanding of natural resources and the environment.

Mathematical analysis is key to the modeling and management of natural resources. By presenting required mathematical methods, classic dynamic models for non-renewable and renewable resources, and by exploring several contemporary problems, this text provides a foundation for advanced research. Topics include seminal models in fishery, forestry and non-renewable resource management, as well as an extensive collection of contemporary applications that include the optimal transition from fossil fuels to clean energy, the optimal timing of interventions to save endangered species, pest control and the optimal management of antibiotic resistance. Deterministic and stochastic models in both discrete and continuous time are covered. The book encourages students to pursue a deeper understanding of the

analytics of resource problems and to deploy numerical methods when analytical results prove intractable. The combination of analysis, theory and applications will launch the next generation of resource economists, while serving as a useful reference for established researchers.

The tools of environmental economics guide policymakers as they weigh development against nature, present against future, and certain benefits against uncertain consequences. From reluctant-but-necessary calculations of the value of life, to quandaries over profits at the environment's expense, the policies and research findings explained in this textbook are relevant to decisions made daily by individuals, firms, and governments. The fourth edition of *Environmental Economics and Natural Resource Management* pairs the user-friendly approaches of the previous editions with the latest developments in the field. A story-based narrative delivers clear, concise coverage of contemporary policy initiatives. To promote environmental and economic literacy, we have added even more visual aids, including color photographs and diagrams unmatched in other texts. Ancillaries include an Instructor's Guide with answers to all of the practice problems and downloadable slides of figures and tables from the book. The economy is a subset of the environment, from which resources are obtained, workers and consumers receive sustenance, and life begins. Energy prices and environmental calamities constrain economic growth and the quality of life. The same can be said about overly restrictive environmental policies. It is with an appreciation for the weighty influence of this discipline, and the importance of conveying it to students, that this textbook is crafted.

This book consists of a collection of articles describing the emerging and integrated area of Energy, Natural Resources and Environmental Economics. A majority of the authors are researchers doing applied work in economics, finance, and management science and are based in the Nordic countries. These countries have a long tradition of managing natural resources. Many of the applications are therefore founded on such examples. The book contents are based on a workshop that took place during May 15–16, 2008 in Bergen, Norway. The aim of the workshop was to create a meeting place for researchers who are active in the area of Energy, Natural Resource, and Environmental Economics, and at the same time celebrate Professor Kurt Jorns' 60th birthday. The book is divided into four parts. The first part considers petroleum and natural gas applications, taking up topics ranging from the management of incomes and reserves to market modeling and value chain optimization. The second and most extensive part studies applications from electricity markets, including analyses of market prices, risk management, various optimization problems, electricity market design, and regulation. The third part describes different applications in logistics and management of natural resources. Finally, the fourth part covers more general problems and methods arising within the area.

This 7th edition offers a wealth of new examples and hot topics, such as genetically modified organisms and the cost effectiveness of new transportation fuels. The international edition also considers environmental problems and policies in Western Europe, China and the developing nations.

Natural Resource Economics: The Essentials offers a policy-oriented approach to the increasingly influential field of natural resource economics that is based upon a solid foundation of economic theory and empirical research. Students will not only leave the course with a firm understanding of natural resource economics, but they will also be exposed to a number of case studies showing how underlying economic principles provide the basis for specific natural resource policies. Including current data and research studies, this key text also highlights what insights can be derived from the actual experience. Key features include: Extensive coverage of the major issues including energy, recyclable resources, water policy, land conservation and management, forests, fisheries, other ecosystems, and sustainable development; Introductions to the theory and method of natural resource economics including externalities, experimental and behavioral economics, benefit-cost analysis, and methods for valuing the services provided by the environment; Boxed 'Examples' and 'Debates' throughout the text which highlight global examples and major points for deeper discussions. The text is fully supported with end-of-chapter summaries, discussion questions, and self-test exercises in the book, as well as with multiple-choice questions, simulations, references, slides, and an instructor's manual on the Companion Website. This text is adapted from the best-selling *Environmental and Natural Resource Economics*, 11th edition, by the same authors.

This book presents the major themes of the economic literature on natural resources and the environment. It is designed to bring the reader, in part with the aid of a unified model of optimal resource use, to the frontiers of the discipline, using only elementary mathematical models. Features special to exhaustible and renewable resources, including the problems posed by market imperfections, are treated as extensions of the basic model. The theoretical discussion is enriched with examples and applications, including a systematic investigation of the behaviour of resource reserves, costs, prices, and substitution possibilities. Substantial attention to environmental, as well as extractive, resources is a distinctive aspect of this book. The author describes methods of estimating the environmental costs of resource development and other projects, and presents some key empirical findings. Policy instruments to protect the environment, such as taxes, subsidies, marketable permits, and direct controls, are carefully analysed from a welfare-theoretic point of view.

Providing useful insights on the use of Multi-Criteria Decision Analysis (MCDA) in natural resource management, this book examines a number of empirical applications for several countries and a variety of natural resources. It is shown that using MCDA in the management of water, forestry, wetland and other natural resources can substantially improve the design and implementation of natural resource and environmental policies. Stakeholder involvement is also an important determinant of successful resource management and MCDA provides a useful and effective framework for getting stakeholders involved in resource management decisions. Using Multi-Criteria Decision Analysis in Natural Resource Management gives in-depth analysis of the potential problems in applying these techniques, including difficulties eliciting required information, lack of suitable measures for environmental variables and the need to develop innovative methods to simplify the use of MCDA.

Every decision about energy involves its price and cost. The price of gasoline and the cost of buying from foreign producers; the price of nuclear and hydroelectricity and the costs to our ecosystems; the price of electricity from coal-fired plants and the cost to the atmosphere. Giving life to inventions, lifestyle changes, geopolitical shifts, and things in-between, energy economics is of high interest to Academia, Corporations and Governments. For economists, energy economics is one of three subdisciplines which, taken together, compose an economic approach to the exploitation and preservation of natural resources: energy economics, which focuses on energy-related subjects such as renewable energy, hydropower, nuclear power, and the political economy of energy resource economics, which covers subjects in land and water use, such as mining, fisheries, agriculture, and forests environmental economics, which takes a broader view of natural resources through economic concepts such as risk, valuation, regulation, and distribution. Although the three are closely related, they are not often presented as an integrated whole. This Encyclopedia has done just that by unifying these fields into a high-quality and unique overview. The only reference work that codifies the relationships among the three subdisciplines: energy economics, resource economics and environmental economics. Understanding these relationships just became simpler! Nobel Prize Winning Editor-in-Chief (joint recipient 2007 Peace Prize), Jason Shogren, has demonstrated excellent team work again, by coordinating and steering his Editorial Board to produce a cohesive work that guides the user seamlessly through the diverse topics. This work contains in equal

parts information from and about business, academic, and government perspectives and is intended to serve as a tool for unifying and systematizing research and analysis in business, universities, and government

Decisions about the conservation and use of natural resources are made every day by individuals, communities, and nations. The latest edition of Field's acclaimed text highlights the incentives and trade-offs embedded in such decisions, providing a lucid introduction to natural resource issues using the analytical framework of economics. Employing a logical structure and easy-to-understand descriptions, Field covers fundamental economic principles and their general application to natural resource use. These principles are further developed in chapters devoted to specific resources. Moreover, this up-to-date volume addresses the challenge of achieving socially beneficial utilization rates in the twenty-first century amid continuing population growth, urbanization, and global climate change. Topics new to the Third Edition include: • implications of climate change on resources • fracking • energy intensity and the energy efficiency gap • reducing fossil energy • forests and carbon • international water issues • globalization and trade in natural resources

Environmental and Natural Resource Economics is the best-selling text for natural resource economics and environmental economics courses, offering a policy-oriented approach and introducing economic theory and empirical work from the field. Students will leave the course with a global perspective of both environmental and natural resource economics and how they interact. Complemented by a number of case studies showing how underlying economic principles provided the foundation for specific environmental and resource policies, this key text highlights what can be learned from the actual experience. This new, 11th edition includes updated data, a number of new studies and brings a more international focus to the subject. Key features include: Extensive coverage of the major issues including climate change, air and water pollution, sustainable development, and environmental justice. Dedicated chapters on a full range of resources including water, land, forests, fisheries, and recyclables. Introductions to the theory and method of environmental economics including externalities, benefit-cost analysis, valuation methods, and ecosystem goods and services. Boxed 'Examples' and 'Debates' throughout the text which highlight global examples and major talking points. The text is fully supported with end-of-chapter summaries, discussion questions, and self-test exercises in the book and multiple-choice questions, simulations, references, slides, and an instructor's manual on the Companion Website.

Accessible to students and practitioners without an advanced degree in environmental economics, this essential reference work pinpoints the role of the economy in both creating and solving many of the world's most pressing environmental challenges. • Provides stand-alone, easy-to-understand, politically neutral, and factually driven entries by leading experts on all the major themes and topics in environmental and natural resource economics • Supplies a usable framework for readers without an advanced degree in the subject to understand debates in the public forum on environmental and natural resource economics • Delivers the most comprehensive overview of one of the fastest-growing subdisciplines of economics

Environmental issues are of fundamental importance, and a broad approach to understanding the relationship of the human economy and the natural world is essential. In a rapidly changing policy and scientific context, this new edition of Environmental and Natural Resource Economics reflects an updated perspective on modern environmental topics. Now in its fourth edition, this book includes new material on climate change, the cost-competitiveness of renewable energy, global environmental trends, and sustainable economies. The text provides a balanced treatment of both standard environmental economics and ecological economics, based on the belief that these two approaches are complementary. Several chapters focus on the core concepts of environmental economics, including the theory of externalities, the management of public goods, the allocation of resources across time, environmental valuation, and cost-benefit analysis. Material on ecological economics includes such topics as macroeconomic scale, entropy, and "green" national accounting. Topical chapters focus on: energy; climate change; water resources; international trade; forests; fisheries; and agriculture, with an emphasis on designing effective policies to promote sustainability and a "green" economy. Harris and Roach's premise is that a pluralistic approach is essential to understand the complex nexus between the economy and the environment. This perspective, combined with its emphasis on real-world policies, is particularly appealing to both instructors and students. This is the ideal text for classes on environmental, natural resource, and ecological economics.

Global warming is an increasing problem, tropical forests are being wiped out and major upper watersheds are being degraded. Using insights provided by environmentalism, ecology and thermo-dynamics, this book – first published in 1989 – outlines an economic approach to the use of natural resources and particularly to the problem of environmental degradation. Edward Barbier reviews and critiques the long past of environmental and resource economics and then goes on to elaborate an economics which allows us to develop alternative strategies for dealing with the problems faced. With examples drawn from Latin America and Indonesia, he not only develops a major theoretical advance but shows how it can be applied. Barbier's work is an important and relevant contribution to the discussion surrounding the economics of environmental sustainability. A collection of scholarly accounts and articles written by recognized experts in environmental economics, this book is the first of its kind and as a valuable reference and textual source for graduate students and active researchers. It draws together the pedagogical discussion of the key tools used to conduct theoretical and empirical research in natural resource and environmental economics. With contributions by prominent international researchers like Robert Ayres, Charles Perrings and Anastasios Xepapadeas, the book will be useful for researchers who wish to learn new techniques or change their area of research emphasis within natural resource and environmental economics or those who wish to familiarize themselves with these tools.

Integrating aspects of philosophy, political science, and some environmental science, this text provides a multidisciplinary approach to environmental economics and natural resources policy. Included is a chapter on value systems and the role of ethics.

Now in its fourth edition, *Natural Resources and Environmental Economics*, provides comprehensive and contemporary analysis of the major areas of natural resource and environmental economics. All chapters have been fully updated in light of new developments and changes in the subject, and provide a balance of theory, applications and examples to give a rigorous grounding in the economic analysis of the resource and environmental issues that are increasingly prominent policy concerns. This text is suitable for second and third year undergraduate and postgraduate students of economics.

This text has been written primarily for the specialist market of second and third year undergraduate and post-graduate students of economics. The clear explanations and basic principles that underpin the text, however, make it readily accessible to non-economists coming to environmental economics from diverse programmes of study. *Natural Resource and Environmental Economics* is among the leading textbooks in its field. Well written and rigorous in its approach, this third edition follows in the vein of previous editions and continues to provide a comprehensive and clear account of the application of economic analysis to environmental issues. This new edition has evolved with the times and been thoroughly updated to reflect recent developments in environmental issues and policies, such as forestry, biodiversity and pollution control. The early chapters explain the development and role of environmental economics before further chapters advance the student at a suitably challenging but achievable level.

Utilizes basic concepts of economics and finance to explain the relationship of the economy to the ecosystem, seeing the ecosystem as imposing biophysical constraints on economic growth. Means of sustainable economic development and sustainable resource use are stressed. Background material and alternative, more efficient, problem-solving approaches are included.

Natural Resource and Environmental Economics provides a comprehensive and clear account of the application of economic analysis to environmental issues. New features in this edition: sustainability as an organising theme; a new chapter on forestry and management for multiple use, including biodiversity conservation; a new chapter on irreversibility risk and uncertainty; extended coverage of environmental valuation theory and practice; extended discussion of pollution control with more attention to the spatial dimensions of the problem; and environmental accounting theory and practice related to sustainability.

Harris and Roach present a compact and accessible presentation of the core environmental and resource topics and more, with analytical rigor as well as engaging examples and policy discussions. They take a broad approach to theoretical analysis, using both standard economic and ecological analyses, and developing these both from theoretical and practical points of view. It assumes a background in basic economics, but offers brief review sections on important micro and macroeconomic concepts, as well as appendices with more advanced and technical material. Extensive instructor and student support materials, including PowerPoint slides, data updates, and student exercises are provided.

Extensively revised and updated, this popular text presents an accessible yet rigorous treatment of

Environmental and natural resources have dramatically influenced consumer decisions, personal lifestyles, corporate planning and public policy over recent years. This text introduces the economic theories and methods of analysis economists use to approach these issues.

The tools of environmental economics guide policymakers as they weigh development against nature, present against future, and certain benefits against uncertain consequences. The policies and research findings explained in this textbook are relevant to decisions made daily by individuals, firms, and governments. This textbook offers instructors and students a user-friendly, relevant, and up-to-date introduction to these topics while covering recent advancements in the field and significant political and economic changes. The fifth edition has been thoroughly updated while retaining the story-based narratives and visual emphasis of previous editions, capturing students' attention with full-color photos, graphs, and illustrations. It addresses the impact of changes in world leaders, national priorities, and international agreements along with key developments in the energy sector. These include the way hydraulic fracturing and the surging popularity of natural gas have revolutionized the fossil fuel industries; how new, green-energy technologies are bringing prices down and efficiency levels up; and the arrival of innovative energy sources such as ocean-thermal energy conversion. *Environmental Economics and Natural Resource Management* promotes environmental and economic literacy with policy-oriented, application-based content, all delivered in concise, accessible discussions. Through its engaging approach, the text brings the economic way of thinking into discussions of personal, community, corporate, and government activities that affect environmental assets and the quality of life.

This important book deals with the essential principles of resource and environmental economics, provides applications to contemporary issues in this field, and outlines and assesses policies being used or proposed for managing the use of environmental and natural resources. Covering specific contemporary topics such as agriculture and the environment, water use, greenhouse gas management, biodiversity conservation, tourism and the environment, and environmental economics and health, leading issues in resource and environmental economics are outlined and analyzed in an innovative manner. Institutional economics (both new and traditional) is applied and compared with other approaches such as neoclassical economics, behavioral economics and the Austrian School of Economics. This heterogeneous, multi-perspective approach enables problems to be considered from several different angles, thus enhancing the reader's comprehension of the subject matter. Furthermore, using minimal technical jargon, the book takes into account aspects of modern economic analysis such as the costs of and constraints on decision-making and the transaction costs involved in policy implementation.

In this book, Jon Conrad and Colin Clark develop the theory of resource economics.

The Economics of the Environment and Natural Resources covers the essential topics students need to understand environmental and resource problems and their possible solutions. Its unique lecture format provides an in-depth exploration of discrete topics, ideal for upper-level undergraduate, graduate or doctoral study. Each chapter depicts the key theoretical insights, major issues, and real-life problems that motivate the subject. In addition, the chapters feature practical applications and case studies, a list of annotated further reading, and extensive references. Offers broad treatment of issues in Environmental and Resource Economics. Provides in-depth exploration of a wide range of topics with its unique lecture format. Depicts key theoretical insights, major issues, and real-life problems for each subject. Features case studies, annotated further reading, extensive references, and a detailed glossary.

Resource Economics engages students and practitioners in natural resource and environmental issues from both local and global standpoints. The fourth edition of this approachable but rigorous text provides a new focus on risk and uncertainty as well as new applications that address the effect of new energy technologies on scarcity and climate change mitigation and adaptation, while preserving and systematically updating the approach and key features that drew many thousands of readers to the first three editions.

Through a combination of global data analysis and focused country level analysis, this timely book provides answers to the most pertinent country and industry specific questions defining the current relationship between technology, natural resources and economic growth. Technology, Natural Resources and Economic Growth will provide a valuable resource for a wide readership including postgraduate students, researchers, academics and policy makers working in the fields of environmental and ecological economics.

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