
Environmental Markets

Economics for a Sustainable Earth Series

Environmental Markets

Equity and Efficiency

Edited by
Graciela Chichilnisky
and Geoffrey Heal

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Economics for a Sustainable Earth Series

Graciela Chichilnisky and Geoffrey Heal, Editors

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Economic forces are driving dramatic changes in the environment of our planet. Our grandchildren may live in a world radically different from our own. Between our lifetimes and theirs, economic activity may cause changes in climate and in plant, animal, and insect populations greater than any since the evolution of human societies, with far-reaching consequences for human well-being. This poses a challenge to economic analysis, for economists have traditionally taken the economy's material and biological surroundings as given, independent of economic activity. Books in this series grapple with the consequences of human domination of global ecological and biogeochemical systems.

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Preface

This is the second book in a series studying the economic implications of human domination of the planet. The first, *Valuing the Future: Economic Theory and Sustainability* (Geoffrey Heal, 1998), addressed the conceptual issues raised by concerns about sustainability.

Global environmental markets became a timely topic when the 1997 Kyoto Protocol provided a foundation for the development of the first global carbon markets. The protocol is a positive event particularly for the editors of this book, who for many years worked closely with the United Nations Climate Convention and recommended these markets as the institution of choice for the reduction of global carbon emissions.

Several of the articles in *Environmental Markets* are an outgrowth of global negotiations and a product of the lively debate involving the role of distribution and of efficiency in these carbon markets. Because distribution and efficiency are at the core of the relationship between industrial and developing countries, they are key concerns in resolving the thorny issues that have stalled the negotiations for several years. An international meeting organized by the OECD in Paris in June 1993, in which the major players in the global negotiations participated, explored the connections between equity and efficiency. At that meeting, the first-named editor presented findings that are included in this book, namely, that global carbon markets trade unusual goods—global public goods that are privately produced—and that this circumstance leads to an intrinsic connection between distribution and efficiency that does not exist in standard markets. In environmental markets, therefore, the traditional separation of equity and market efficiency may break down. This fact leads to new policy implications for global carbon markets, possibly providing a foundation for win-win solutions in the global negotiations that can benefit both rich and

poor countries. Such results may draw together two aims that were previously seen as separate and almost opposed to each other: market efficiency on the one hand and equitable use of the Earth's atmosphere on the other.

As human societies grapple with the increasing scarcity of environmental resources, environmental markets may assume an increasingly important role in the global economy. Along with markets for knowledge, which also involve privately produced public goods, environmental markets are likely to be among the most significant new institutions in the world economy during the next century. Indeed, the new economics of markets with privately produced public goods may provide a means of finding solutions to the global environmental problems.

That some form of equity may be needed for efficiency is a ray of hope in what is otherwise a worrisome environmental picture. Our aim here is to present in a concise and readily available form a compilation of excellent original contributions by a number of experts, which should advance our understanding of how markets contribute to the solution of environmental problems. The articles in this book offer a technical as well as policy-oriented guide for the understanding of the environmental markets of the future.

We wish to thank the authors of the articles as well as many of our colleagues and friends at the various institutions that supported our research during the process of preparing and editing this book. We are especially appreciative of the support from Columbia University, Stanford University, OECD, UNESCO, UNIDO, UNDP and the UN Climate Convention. Greg Howard and Kathy Richardson provided administrative support. Natasha Chichilnisky Heal was a valued supporter during the editors' joint enterprise. Chichilnisky acknowledges the support of Peter Eisenberger, vice provost of Columbia University and director of its Earth Institute and the Lamont Doherty Earth Observatory. To all our friends and colleagues, our warm thanks. To the reader: We hope the work that we started here will grow. It is an important topic and it has a long way to go. We view this book as the start of a journey into the future.

*Graciela Chichilnisky
Geoffrey Heal*