



GREEN ECONOMICS

CONFRONTING THE ECOLOGICAL CRISIS

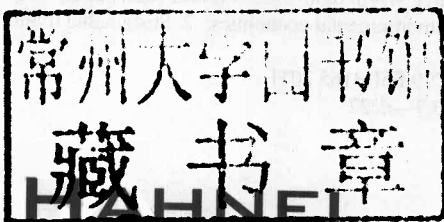


ROBIN HAHNEL

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This book is dedicated to Kristen Sheeran, who gave up tenure at the University of Maryland to become Executive Director of Economics for Equity and the Environment because she knew the ecological crisis we face must be confronted more quickly than wheels turn in ivory towers.

Acknowledgments

This book is written in desperation. The human species has launched the planet on a trajectory that threatens to make all previous environmental disasters pale by comparison. Despite the fact that more and more people do “get it,” our leaders, and the current political and economic systems we labor under, have proved unable to make any progress whatsoever toward heading off climate change disaster.

The much-anticipated climate meetings in Copenhagen in December 2009 ended in disaster, threatening to undo diplomatic progress that had consumed decades of precious time. And as Bill McKibben, cofounder of the campaign to stabilize atmospheric concentrations of greenhouse gases at 350 parts per million, recently lamented, after “the planet has just come through the warmest decade, the warmest 12 months, the warmest six months, and the warmest April, May, and June on record . . . in late July, the U.S. Senate decided to do exactly nothing about climate change. They didn’t do less than they could have—they did *nothing*, preserving a perfect two-decade bipartisan record of no action” (TomDispatch.com, August 4, 2010).

This book is not written because the author thinks he has all the answers we need. Quite the contrary, I believe it may be some time before anyone provides a grand theoretical synthesis suitable to analyzing all facets of the relationship between human economic activity and the natural environment. While we can build from insights provided by various heterodox approaches as well as by mainstream economics, unfortunately all schools of economic thought fall short of what is needed in one way or another. And while the efforts of those who advocate on behalf of the environment have often been inspirational and

ACKNOWLEDGMENTS

heroic, unless political strategies improve there is little reason to expect the environmental movement to achieve better results in the future.

After acknowledging pioneering work by environmental, ecological, institutional, Marxist, and other economists, it may appear unseemly to proceed to criticize them. But improvements will not come without criticism, which should not be confused with pointing the finger of blame at those we owe a debt of gratitude for all they have done. Those who study and work to protect the environment are not the reason the environment is in serious danger, even if better analyses and more effective political strategies will be required to better protect the environment.

I want to thank all the students in my environmental economics classes over the past decades at American University, Lewis and Clark College, and Portland State University who worked with me to separate the wheat from the chaff in received wisdom. I thank my editors at M.E. Sharpe—Lynn Taylor, who rescued this project when it was all but lost, and Henrietta Toth and Laurie Lieb, who labored mightily to make the book more readable. But mostly I thank Kristen Sheeran for teaching a long-time radical economist that he needed to take environmental issues more seriously.

As much as I owe to these and others, the views expressed here are entirely my own responsibility.

Introduction

Green Economics: Confronting the Ecological Crisis is an attempt to provide environmentalists and progressives with the kind of economics that suits their needs today. It is written by a professional economist who has taught environmental economics, mainstream economic theory, radical political economy, institutional economics, and post-Keynesian economics at the graduate and undergraduate levels for more than thirty-five years in one of the few economics departments in the United States with a PhD program that features heterodox as well as mainstream schools of thought. The author of *Green Economics* has also worked as an activist in a variety of progressive and environmental campaigns and organizations for more than forty-five years. He understands why activists mistrust economists, yet desperately need helpful economic analysis.

Unfortunately, there is no grand synthesis for analyzing economics and the environment. There are useful insights from mainstream economics when its theories are properly interpreted, and ecological economics and several other heterodox schools of economic thought provide important ideas as well. However, every theoretical framework for analyzing the relations between our economic activities and the natural environment remains incomplete and flawed. As a result, there is no single place to turn for someone seeking to understand what is necessary to protect the environment in ways that are effective and fair. *Green Economics* does not pretend to provide the grand synthesis that, unfortunately, still lies beyond our reach. However, those who struggle to protect the environment can ill afford to wait for a grand synthesis. *Green Economics* gathers together useful insights available from many

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sources and dispels debilitating myths independent of origin. The three brief sections that follow in this introduction offer a glimpse of where mainstream economics can be helpful, where mainstream economics can be misleading, and where heterodox ideas can provide important insights but also create unnecessary confusion.

What If 250 Years Ago . . .

. . . Americans had put a price on carbon? Of course, nobody understood 250 years ago that carbon emissions from burning fossil fuels were going to destabilize the earth's carbon cycle and that increasing concentrations of greenhouse gases in the atmosphere would threaten to unleash cataclysmic changes in the earth's climate systems by the end of the twenty-first century. But now, with the benefit of hindsight, we do know that we should have imposed a tax on carbon emissions as far back as colonial days when the market system was just getting up a head of steam in the New World. One place mainstream economics can be useful is helping us understand how much damage getting an important price wrong can cause in a market economy.

Comparing the timelines of important discoveries in the evolution of coal and of solar energy suggests that had damage from carbon emissions been factored into the price system our economy might well have evolved quite differently. In colonial America, blacksmiths used small amounts of "stone coal" to supplement the charcoal normally burned in their forges. While underground coal deposits were first discovered near Richmond, Virginia, in 1701, large deposits in Pennsylvania, Ohio, Kentucky, and western Virginia were only discovered in the 1750s, and it was not until the mid-1800s that significant amounts of coal were mined in the United States. And it was not until 1882—when coal was plentiful, cheap, and available at the end of any railroad line—that a coal-fired, electric generating station invented by Thomas Edison was first used to supply electricity to households in New York City. Meanwhile, Horace de Saussure had built a solar collector by 1767; by 1816 Robert Stirling had built a solar thermal electric heat engine that Lord Kelvin used in his university classrooms; August Mouchet had converted solar radiation into mechanical power and together with Abel Pifre had constructed solar-powered engines for various uses by 1860; Charles Fritts had built the first genuine solar cell by 1883; and Baltimore inventor Clarence Kemp patented the first commercial solar water heater in 1891.

These two timelines do not suggest that we were condemned to embrace the most environmentally damaging part of our current fossil fuel-based energy system to produce electricity for lack of any technological alternative. It is more likely that significant mispricing, combined with path dependency,

explains why “king coal” won out over solar power in the United States, leading us in 2007 to produce 48.5 percent of our electricity by burning coal but only .015 percent from solar thermal and photovoltaic sources.

When You Ask the Wrong Question . . .

. . . you get the wrong answer. This is why mainstream environmental economic modelers can erroneously conclude that taking strong measures now to avert climate change is not “cost-effective,” while climate scientists warn us correctly that failure to reduce greenhouse gas emissions immediately and dramatically would be tomfoolery. When people feel safe and secure, it makes sense to weigh the costs and benefits of doing a little more or less of something. And if some outcomes are unlikely to occur, it makes good sense to ignore these improbable outcomes provided their consequences do not dwarf those of more probable outcomes. In effect, this is what mainstream economic climate modelers do when they estimate the benefits of avoiding the effects of only mild to moderate climate change, which is most likely, discount those benefits since they will occur many decades in the future, and then conclude that the discounted benefits do not warrant the cost of significant emissions reductions in the present. They have answered the wrong question. They have ignored the main fact, which is that absent any serious response we run an unacceptable risk of inducing cataclysmic climate change, and until we are safe we can ill afford to be weighing pros and cons of tolerating a little more or less mild climate change.

Climate scientists have answered the right question, which is: “How much do we have to reduce emissions now to reduce the risk of cataclysmic climate change to an acceptable level so we can feel reasonably safe?” When answering the right question, climate scientists focus on the central issue—cataclysmic climate change that we can ill afford—even though it is far less likely than the kind of mild to moderate climate change mainstream economic climate modelers focus on instead. When mainstream economic modelers ignore cataclysmic climate change because it is less likely and because they cannot even begin to estimate the damages if it does occur, they make themselves irrelevant to the primary issue at hand. Climate scientists, on the other hand, correctly treat the problem as an insurance problem: Can we afford the premiums we have to pay to make ourselves reasonably safe? The answer to this question in the case of cataclysmic climate change turns out to be a resounding “yes.” As insurance policies go, it is easily affordable and, in fact, quite a good buy!

When mainstream economists conclude that the expected benefits of avoiding moderate climate change do not warrant the costs of significant emission

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reductions, all they have discovered is that the expected value of an insurance policy we do not need is negative. The policy we need is the one they did not even consider since their models do not take cataclysmic climate change into account. Moreover, the expected value of most insurance policies for buyers is always negative since it must be positive for sellers if the insurance industry is to be profitable! However, this does not mean we are foolish whenever we buy insurance. Insurance is about avoiding unlikely consequences you cannot afford, and to do this sensible people happily buy insurance policies with an expected negative value all the time. This is why we should pay an affordable premium and reduce carbon emissions dramatically now to avoid cataclysmic climate change—an outcome whose consequences are not just incalculable but unthinkable. Weighing costs and benefits of a little more or less moderate climate change is completely beside the point.

Growth of What?

Economists have long worshipped at the altar of economic growth. If economists had a motto, it would likely be “A rising tide raises all boats.” Not long ago a dissident group of ecological economists issued a blunt challenge to this conventional wisdom: “Infinite growth on a finite planet is impossible.” It was a showstopper, although the cast in the mainstream economics show paid it little attention, and their show goes on.

How can it make sense to strive for something that is impossible to achieve? Why should we hope to grow faster if faster growth only exhausts our finite resources and fouls the environment with our wastes that much sooner? If infinite growth is not sustainable, then should we not be searching for a steady state economy that is sustainable and does not impoverish future generations?

Ecological economists have done a great service by issuing their bold challenge. However, as we discover in Chapter 5, it is important to ask “growth of what” when considering this issue. Much time has been wasted because people have been talking past each other and talking about the growth of very different things. What ecological economists call *throughput* and insist cannot continue to grow is not the same as the gross domestic product that mainstream economists talk about growing. In the shouting match that has ensued, important issues that we will need to explore have been pushed into the background.

Organization of This Book

Part I explains why we need a new environmental economic paradigm in order to develop a much broader intellectual framework than the simplistic problem-

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atic of allocating scarce natural resources to competing insatiable wants and disposing of the wastes of economic activity in the least costly way. Chapter 1 considers the implications of a full-world as opposed to an empty-world mind-set. Chapter 2 explains why cost-benefit analysis (CBA) is far from value-free and not always the appropriate method for making environmental policy choices. Chapter 3 explores complicated issues that arise when we try to define “sustainable development” and measure “progress.”

Moving discussion beyond platitudes about population growth and industrialization, Part II focuses attention instead on perverse incentives intrinsic to our economic institutions that put the natural environment at much greater risk than people realized until forty years ago, when the modern environmental movement was born. Chapter 4 explains the implications of externalities, public goods, free access to common property resources, and discrepancies between profit rates and the social rate of time discount. When these mainstream theories are properly interpreted, they reveal a great deal about why the environment is endangered. Chapter 5 confirms the concerns emphasized by heterodox schools of economic thought that private enterprise and market economies contain an unhealthy “growth imperative” that is environmentally destructive are well founded, even if some who make this argument fail to present their case in a convincing way.

Many people, including some economists, suffer from fundamental confusions about how different environmental policies work. Part III equips environmentalists and progressives to confront professional economists who often do not share their values or priorities in debates over environmental policy. Chapter 6 begins by explaining why free-market environmentalism is not the answer to environmental problems its proponents would have us believe, but is instead an ideological and political obstacle to solving environmental problems. Chapter 7 goes on to explain the logic, as well as the strengths and weaknesses, of different environmental policies from a progressive perspective.

Part IV applies our new understanding to climate change, the greatest environmental problem humanity has ever faced. Unfortunately, averting climate change, and doing so fairly, requires overcoming serious obstacles that have stymied progress to date. Chapter 8 reviews the history of climate negotiations leading up to the disastrous meetings in Copenhagen in December 2009. Chapter 9 evaluates criticisms of the Kyoto Protocol and identifies important lessons to be learned. Chapter 10 applies those lessons to designing an effective, efficient, and fair post-Kyoto treaty.

The conclusion briefly discusses political strategy and ideas about more far-reaching, systemic changes that might prove necessary to alter our relations with the natural environment before damage becomes irreversible.

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Part I

Toward a New Paradigm

Part I explores important components of a new environmental economic paradigm needed to broaden the intellectual framework beyond the simplistic problematic of allocating scarce natural resources to competing insatiable wants and disposing of the wastes of economic activity in the least costly way.

