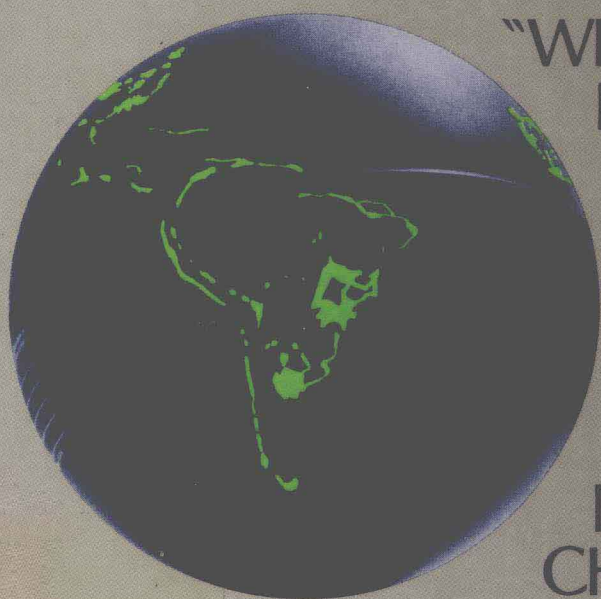


# Building a Sustainable Society

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"WE HAVE NOT  
INHERITED  
THE EARTH  
FROM OUR  
FATHERS;  
WE ARE  
BORROWING  
IT FROM OUR  
CHILDREN."

Lester R. Brown

# Building a Sustainable Society

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Lester R. Brown

A WORLDWATCH INSTITUTE BOOK



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# Building a Sustainable Society

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*To Brian and Brenda—  
and generations to come*

# Preface

This book is not an isolated effort to discuss the sustainable society, but rather part of the continuing research program of the Worldwatch Institute. For those who regularly read the Worldwatch Papers, much of the material in the early chapters on converging demands will be familiar. The material is included here particularly for the sake of those readers abroad who do not have ready access to the Institute's other publications. Those familiar with the issues may want to go directly from the Introduction to Part II, concentrating on the two-thirds of the book that is prescriptive.

Although the issues addressed here are the same as those covered in the early years of Worldwatch, the perspective is far different. When the Institute began in early 1975, there was little appreciation of the firewood crisis that was emerging in the Third World. In Washington, the official position was that OPEC's 1973 increase in the price of oil was artificially high and that it would shortly return to a more normal level. There was scant acknowledgment of the extent of soil erosion, a problem now recognized as worldwide. It was still hoped that the leveling off of the world fish catch in the early seventies was but a temporary interruption in a long-term increase. At that time there was little understanding of the relationship between global deforestation, and lumber prices and the cost

of housing. Double-digit global inflation was believed to be an aberration, a result of the unwarranted OPEC oil-price increase.

Now, in 1981, the perspective has changed. Awareness of these problems is far more widespread. Publication during the seventies of such studies as *The Limits to Growth*, *Mankind at the Turning Point*, *Soft Energy Paths*, and *Energy Future* drew attention to the forces that threaten to undermine the economy, such as environmental deterioration and oil-reserve depletion, and to the need to move in new directions. Nearly a decade of public discussion and debate of the issues was capped with the release of the U.S. government's *Global 2000 Report* in the summer of 1980. With this official recognition of the issues, the time has come to devise a response, to outline the steps to a sustainable society.

The picture of a sustainable society that is drawn here has of necessity been painted with a broad brush. It could not be otherwise if the analysis were to be confined to a single volume. The purpose is to describe the essential character of a sustainable society, to provide a sense of direction for planners and policymakers who are too busy to do all the reading and research needed to make decisions.

Although this book was written in the urban setting of Washington, D.C., and taps the vast flows of information from all over the world that converge in a major capital, it also was shaped by my own agricultural roots. The analysis of trends and events reflects not only a decade of farming during my high school and college years, but six months spent living in Indian villages and more than a decade of intensive involvement in world agricultural development while working with the U.S. Department of Agriculture.

As noted earlier, this book is not a fresh beginning. Nor is it the last word. Subsequent Worldwatch Papers and other books will elaborate on many of the issues raised here. A forthcoming Worldwatch book, for example, will elaborate on the



subject of Chapter 9, “Renewable Energy: Turning to the Sun.”

In an undertaking of this scale, an author is indebted not only to people who assisted directly with the book, but also to many writers and analysts for their intellectual contributions. Beyond this, I am heavily indebted to the United Nations Fund for Population Activities for the financial support for this project. Rafael Salas, who heads the fund, and Jyoti Singh, our project officer, have been a great help as the book evolved. In addition, there are many sources of financial support for the Institute above and beyond those that directly supported *Building A Sustainable Society*. All these debts are so numerous that I have devoted several pages to acknowledgments at the end of the book.

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# Building a Sustainable Society



# 1

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## Introduction

One of the major centers of Mayan civilization recently made the news, a thousand years after its collapse. This belated attention came when *Science* carried a detailed article in late 1979 analyzing the society's long-term evolution and eventual downfall.<sup>1</sup> Using the latest techniques of paleo-ecological research, scientists determined that the number of Mayans in the lowlands of Guatemala had expanded continuously over 17 centuries, beginning about the time of Homeric Greece in 800 B.C. Doubling on the average of every 408 years, the population by A.D. 900 had reached five million with a density comparable to that of the most agriculturally intensive societies of today.

At this agricultural, cultural, and architectural peak, the



civilization suddenly collapsed. Within decades, the population fell to less than one-tenth of what it had been. An analysis of core samplings from two lake beds in the area hints at the reason for this abrupt decline. As population pressure increased, soil erosion gradually accelerated. The topsoil was being washed into the area's lakes, draining the cropland of its productivity and one of the world's early civilizations of its sustenance.

The members of the joint research team from the University of Chicago and the University of Florida who made these discoveries observe that population-induced environmental stresses had become intense during the centuries preceding collapse. They report that the area was almost wholly deforested by A.D. 250. Deforestation and mounting pressure on croplands then led to the loss of topsoil and the gradual decline of the land's productivity. In passing, the research team points out that the environmental havoc so discernible from our current perspective may not have been perceptible to the "managerial elite or their economic advisors."<sup>2</sup>

These new findings make us look twice at the root causes of the collapse of other early civilizations. The fall of the societies located in the Tigris and Euphrates River Basin had long been attributed to outside invaders. Yet more recent information indicates that the Mesopotamian civilizations, too, may have been the victims of cumulative environmental stresses that eventually reduced food supplies and undermined their economies.<sup>3</sup>

Located in an arid region, the Fertile Crescent civilization grew and flourished on the strength of the food supply that irrigation made possible. But because the irrigation systems had no drainage components, the underground water table gradually rose, and waterlogging and salting of the soil ensued. The land's productivity could not be sustained over the long term.

Like the lowlands of Guatemala, which once supported as