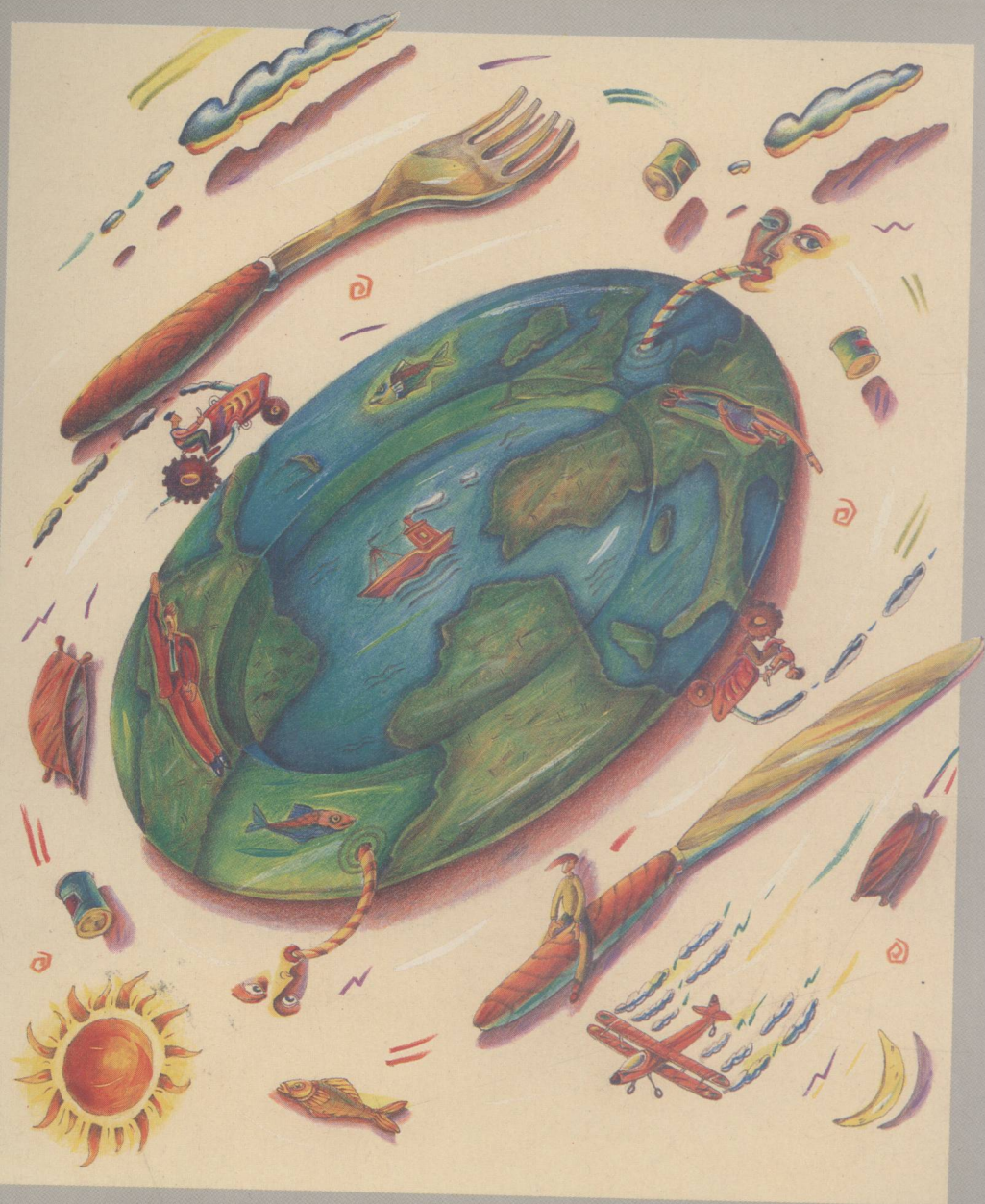


# THE FOOD RESOURCE

JOHN T. PIERCE



THEMES IN RESOURCE MANAGEMENT

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John T Pierce

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# The Food Resource



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## Foreword

The Themes in Resource Management Series has several objectives. One is to identify and to examine substantive and enduring resource management and development problems. Attention will range from local to international scales, from developed to developing nations, from the public to the private sector, and from biophysical to political considerations.

A second objective is to assess responses to these management and development problems in a variety of world regions. Several responses are of particular interest but especially *research* and *action programmes*. The former involves the different types of analysis which have been generated by natural resource problems. The series will assess the kinds of problems being defined by investigators, the nature and adequacy of evidence being assembled, the kinds of interpretations and arguments being presented, the contributions to improving theoretical understanding as well as resolving pressing problems, and the areas in which progress and frustration are being experienced. The latter response involves the policies, programmes and projects being conceived and implemented to tackle complex and difficult problems. The series is concerned with reviewing their adequacy and effectiveness.

A third objective is to explore the way in which resource analysis, management and development might be made more complementary to one another. Too often analysts and managers go their separate ways. A good part of the blame for this situation must lie with the analysts who too frequently ignore or neglect the concerns of managers, unduly emphasize method and technique, and exclude explicit consideration of the managerial implications of their research. It is hoped that this series will demonstrate that research and analysis can contribute both to the development of theory and to the resolution of important societal problems.

John Pierce's book is the eighth in the Themes in Resource Management Series. As with the seventh book which focused upon commercial energy systems and national policies, the primary focus is upon the global scale,



## Foreword

creating significant problems regarding data. Within that context, John Pierce has identified major themes and issues and then examines the resources for and constraints upon food production. In turn, he considers the impacts of population, water, land degradation, climate and energy on the production of food in the developed and developing nations. His analysis stresses that we live very much in an interdependent world, and that the interrelationships among food, land and people are among the most fundamental with which societies must deal.

John Pierce has been analysing agricultural and rural problems for over 15 years. He completed his PhD at the London School of Economics and Political Science and has published numerous articles focused upon agriculture and food production. In this book, he provides a synoptic study of the role of resource and environmental factors which influence the productive capacity of food production in a variety of countries. In a world in which starving children in drought-prone and war-devastated countries have become a regular but discomfiting item in newspapers and television, such a book is timely and needed. The production and distribution of food on a global scale are fundamental problems for which considerable progress is still required.

Bruce Mitchell  
University of Waterloo  
Waterloo, Ontario

May 1989

## Preface

*The Food Resource* has its genesis in research that I was conducting in the early 1980s with Owen Furuseth at the University of North Carolina and Bob Stathers at the University of British Columbia into some of the major natural and environmental resource constraints affecting expanded food production in North America. While the problem at the time was one of abundance and not scarcity, there was a growing body of evidence in North America and worldwide indicating that our present practices were not sustainable over the long-term. While science is important to the future of agriculture it must be emphasized that agriculture is still an overwhelmingly resource-based activity. In an attempt to appraise the changing environment for food production the book out of necessity became a global assessment, retrospectively and prospectively. It purposely emphasizes the supply side of the food equation, as opposed to the equally important demand side, and attempts to assess critically human intervention in the environment and the implications for agriculture. It was thought at the beginning of this project, as now, that to do justice to the topic and, to be of any use to the serious student, the issues must reflect a healthy balance between the physical and social sciences and be thoroughly documented. To that end considerable time and effort have been dedicated.

I am indebted to a large number of individuals for their research and assistance in the preparation of the Food Resource. Bruce Mitchell, the series editor acted as a very constructive critic whose frequent message was the need for clarity of expression. Dave Ellenwood, my research assistant for the last three years, lent his consummate analytical, research and 'rafting skills in a most dedicated way. His good humour and ability to persevere were qualities that were greatly appreciated. Ray Squirrell and Margaret Wheat provided drafting for many of the figures often at short notice and with limited resources. Word processing, often a thankless task but not in this case, was done by Moyna Gick, Gwen Fernandes, Barb

## Preface

Martin, Mary Ward and Dave Ellenwood. Many colleagues and former geography professors directly or indirectly influenced my approach to the Food Resource – among these are Barry Smit, Mike Brklacich, Chris Bryant, Mike Troughton, Mike Bunce and Owen Furuseth. Lastly, I would like to thank my wife Jan for her invaluable advice and assistance in the preparation of the manuscript and my two sons, Emmet and Lewis, for the welcome diversions from the weightier issues of the world. Needless to say all errors of omissions and commission are mine alone.

This book is dedicated to my parents Ron and Beryl Pierce – *per ardua ad astra!*

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