



Tourism Economics, the Environment and Development

Analysis and Policy

Clem Tisdell

Tourism Economics, the Environment and Development

Analysis and Policy

Clem Tisdell

Professor of Economics, The University of Queensland, Australia

Edward Elgar

Cheltenham, UK • Northampton, MA, USA

© Clem Tisdell 2001

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical or photocopying, recording, or otherwise without the prior permission of the publisher.

Published by
Edward Elgar Publishing Limited
Glensanda House
Montpellier Parade
Cheltenham
Glos GL50 1UA
UK

Edward Elgar Publishing, Inc.
136 West Street
Suite 202
Northampton
Massachusetts 01060
USA

A catalogue record for this book
is available from the British Library

Library of Congress Cataloguing in Publication Data

Tisdell, C.A. (Clement Allan)

Tourism economics, the environment and development : analysis and policy /
Clem Tisdell.

p. cm.

Includes bibliographical references (p.).

1. Tourism—Economic aspects. 2. Ecotourism—Economic aspects. 3.
Sustainable development. I. Title.

G155.A1 T543 2001
338.4'79104—dc21

2001040116

ISBN 1 84064 276 9

TOURISM ECONOMICS, THE ENVIRONMENT AND DEVELOPMENT

Preface

I have been writing about tourism economics, outdoor recreation and the environment, as well as associated issues involving economic development, for almost 30 years. For me, it has been a way of extending my long-term interest in ecological and environmental economics. This interest reflects my view that the conservation of nature and our heritage needs to be given a high social priority.

I was delighted when Edward Elgar, during a visit to Brisbane, suggested to me that it might be worth assembling a collection of my essays dealing with tourism economics and the above matters for publication. The outcome of his suggestion is this book.

All but four of the essays included in this book have been previously published and most have been reproduced from the originals using the facsimile method of production. That may make the referencing of this material easier. However, four articles have been reprocessed because the original production from typewriter-script was not of a currently acceptable standard.

Those essays which were previously published appeared in an array of journals, some well known and others little known, and a few are from books or other sources. Consequently, most (virtually all) readers would have been unable to consider these essays as a collected whole. This volume helps to rectify this problem and will enable their bearing on the theme of this book to be better appreciated. Chapter 1 provides a guide to the way in which the articles in this book are interconnected.

Some co-authored articles are included in this collection. I wish to thank my co-authors, Drs Derrin Davis, Rajasundram Sathiendrakumar, Andreas Hohl, David McKee, Jie Wen and Clevo Wilson. Without their contribution, this book would be of less value and interest.

I am grateful also to Alison Mohr and Genevieve Larsen for secretarial assistance in finalising material for this book and the Department of Economics at the University of Queensland for its logistical support. Finally, I wish to thank my wife, Mariel, for bearing with me in this endeavour, not only for this final product but also during the writing of articles spanning several years which have helped to make this book possible. Furthermore, her unwavering support for nature conservation is much appreciated by me.

Clem Tisdell
Brisbane

Acknowledgements

Most of the articles/contributions in this book have been previously published. Unless otherwise stated, I am the sole author. I am grateful to the appropriate editors and/or publishers for permission to reproduce articles or material, as specified below.

Clem Tisdell

2. 'Tourism, the environment and profit', *Economic Analysis & Policy*, 17(1), 1987, pp. 13–30. Reprinted with permission of the Editor.
3. 'Public finance and the appropriation of gains from international tourists: some theory with ASEAN and Australian illustrations', *Singapore Economic Review*, 28(1), 1983, pp. 3–20. Reprinted with the permission of the Managing Editor.
6. 'Ecotourism, economics and the environment: observations from China', *Journal of Travel Research*, 34(4), 1996, pp. 11–19, copyright 1996 by Clement Tisdell. Reprinted by permission of Sage Publications, Inc.
7. 'Investment in ecotourism: assessing its economics', *Tourism Economics*, 1(4), 1995, pp. 375–87. Reprinted with the permission of IP Publishing Ltd.
8. Clem Tisdell and Jie Wen, 'Why care is needed in applying indicators of the sustainability of tourism', *Australian Journal of Hospitality Management*, 4(1), 1997, pp. 1–6. Reprinted with the permission of the Editor.
9. Clem Tisdell and Jie Wen, 'Total economic valuation of protected areas', *Annals of Tourism Research*, 24(4), 1997, pp. 992–4. Reprinted with permission from Elsevier Science.
10. 'Sustaining and maximizing economic gains from tourism based on natural sites: analysis with reference to the Galapagos', in C.A. Tisdell, C.J. Aislabie and P.J. Stanton (eds), 1988, *Tourism Economics*, Institute of Industrial Economics, University of Newcastle, pp. 229–52. Reprinted with the permission of the University of Newcastle.
11. 'Measuring the costs to tourism of pollution, especially marine pollution: analysis and concepts', in C.A. Tisdell, C.J. Aislabie and P.J. Stanton (eds), 1988, *Tourism Economics*, Institute of Industrial Economics, University of Newcastle, pp. 253–86. Reprinted with the permission of the University of Newcastle.
12. 'Ecotourism: aspects of its sustainability and compatibility with conservation, social and other objectives', *Australian Journal of Hospitality Management*, 5(2), 1998, pp. 11–21. Reprinted with permission of the Editor.
13. 'Seasonality in tourism and the desirability of evening out tourism demand', *Economic Activity*, 27(4), 1984, pp. 13–17. Reprinted with permission of the University of Western Australia.
14. Andreas E. Hohl and Clem A. Tisdell, 'Peripheral tourism: development and management', *Annals of Tourism Research*, 22(3), 1995, pp. 517–34. Reprinted with permission from Elsevier Science.

15. 'Tourism development in India and Bangladesh: general issues, illustrated by ecotourism in the Sunderbans', *Tourism Recreation Research*, **22**(1), 1997, pp. 26–33. Reprinted with the permission of the Editor.
16. Clem Tisdell and David L. McKee, 'Tourism as an industry for the economic expansion of archipelagoes and small island states', *Massey Journal of Asian and Pacific Business*, **2**(3), 1990, pp. 2–6. Reprinted with the permission of Massey University.
17. Rajasundram Sathiendrakumar and Clem Tisdell, 'Tourism and the economic development of the Maldives', *Annals of Tourism Research*, **16**(2), 1989, pp. 254–69. Reprinted with permission from Elsevier Science.
18. 'Foreign tourism: benefits to China and contribution to development', in C.A. Tisdell, 1993, *Economic Development in the Context of China*, Macmillan, London, pp. 171–90, copyright 1993 by Clement Tisdell. Reprinted by permission of Macmillan Press Ltd.
19. Clem Tisdell and Jie Wen, 'Foreign tourism as an element in PR China's economic development strategy', *Tourism Management*, March 1991, pp. 55–67. Reprinted with permission of the Editor.
20. Clem Tisdell and Jie Wen, 'Investment in China's tourism industry: its scale, nature, and policy issues', *China Economic Review*, **2**(2), 1991, pp. 175–93. Reprinted with permission from Elsevier Science.
21. 'Tourism development in China: its nature, the changing market and business opportunities', *Journal of Vacation Marketing*, **2**(2), 1996, pp. 123–36. Reprinted with permission of the Editor.
22. Jie Wen and Clem Tisdell, 'Spatial distribution of tourism in China: economic and other influences', *Tourism Economics*, **2**(3), 1996, pp. 235–50. Reprinted with the permission of IP Publishing Ltd.
23. 'The value of, demand for and supply of national parks – economic issues raised by recreational use', Board of Environmental Studies, *Research Paper No. 4*, 1974, University of Newcastle, pp. 1–22. Reprinted with the permission of the University of Newcastle.
24. Derrin Davis and Clem Tisdell, 'Recreational scuba-diving and carrying capacity in marine protected areas', *Ocean & Coastal Management*, **26**(1), 1995, pp. 19–40. Reprinted with permission from Elsevier Science.
25. Derrin Davis and Clem Tisdell, 'Economic management of recreational scuba diving and the environment', *Journal of Environmental Management*, **48**, 1996, pp. 229–48. Reprinted with the permission of Academic Press Ltd.
26. Derrin Davis and C.A. Tisdell, 'Tourist levies and willingness to pay for a whale shark experience', *Tourism Economics*, **5**(2), 1998, pp. 161–74. Reprinted with the permission of IP Publishing Ltd.

Contents

<i>Preface</i>	viii
<i>Acknowledgements</i>	ix

PART I AN OVERVIEW

1 Topics and issues in tourism economics: an overview of this book	3
--	---

PART II TOURISM AND THE ENVIRONMENT: MARKET AND POLITICAL FAILURES AND PUBLIC ECONOMICS

2 'Tourism, the environment and profit', <i>Economic Analysis & Policy</i> , 17(1), 1987, pp. 13–30.	19
3 'Public finance and the appropriation of gains from international tourists: some theory with ASEAN and Australian illustrations', <i>Singapore Economic Review</i> , 28(1), 1983, pp. 3–20.	37
4 National gains from international tourism in the light of environmental factors: further considerations	55
5 International competition for tourist development: politics and global environmental deterioration	68
6 'Ecotourism, economics and the environment: observations from China', <i>Journal of Travel Research</i> , 34(4), 1996, pp. 11–19.	78
7 'Investment in ecotourism: assessing its economics', <i>Tourism Economics</i> , 1(4), 1995, pp. 375–87.	87
8 Clem Tisdell and Jie Wen, 'Why care is needed in applying indicators of the sustainability of tourism', <i>Australian Journal of Hospitality Management</i> , 4(1), 1997, pp. 1–6.	100
9 Clem Tisdell and Jie Wen, 'Total economic valuation of protected areas', <i>Annals of Tourism Research</i> , 24(4), 1997, pp. 992–4.	107
10 'Sustaining and maximizing economic gains from tourism based on natural sites: analysis with reference to the Galapagos', in C.A. Tisdell, C.J. Aislabie and P.J. Stanton (eds), 1988, <i>Tourism Economics</i> , Institute of Industrial Economics, University of Newcastle, pp. 229–52.	110
11 'Measuring the costs to tourism of pollution, especially marine pollution: analysis and concepts', in C.A. Tisdell, C.J. Aislabie and P.J. Stanton (eds), 1988, <i>Tourism Economics</i> , Institute of Industrial Economics, University of Newcastle, pp. 253–86.	121
12 'Ecotourism: aspects of its sustainability and compatibility with conservation, social and other objectives', <i>Australian Journal of Hospitality Management</i> , 5(2), 1998, pp. 11–21.	131

PART III TOURISM IN DEVELOPMENT AND IN LESS DEVELOPED AREAS: MAINLY CASE STUDIES

- 13 'Seasonality in tourism and the desirability of evening out tourism demand', *Economic Activity*, 27(4), 1984, pp. 13–17. 145
- 14 Andreas E. Hohl and Clem A. Tisdell, 'Peripheral tourism: development and management', *Annals of Tourism Research*, 22(3), 1995, pp. 517–34. 150
- 15 'Tourism development in India and Bangladesh: general issues, illustrated by ecotourism in the Sunderbans', *Tourism Recreation Research*, 22(1), 1997, pp. 26–33. 168
- 16 Clem Tisdell and David L. McKee, 'Tourism as an industry for the economic expansion of archipelagoes and small island states', *Massey Journal of Asian and Pacific Business*, 2(3), 1990, pp. 2–6. 181
- 17 Rajasundram Sathiendrakumar and Clem Tisdell, 'Tourism and the economic development of the Maldives', *Annals of Tourism Research*, 16(2), 1989, pp. 254–69. 190
- 18 'Foreign tourism: benefits to China and contribution to development', in C.A. Tisdell, 1993, *Economic Development in the Context of China*, Macmillan, London, pp. 171–90. 206
- 19 Clem Tisdell and Jie Wen, 'Foreign tourism as an element in PR China's economic development strategy', *Tourism Management*, March 1991, pp. 55–67. 220
- 20 Clem Tisdell and Jie Wen, 'Investment in China's tourism industry: its scale, nature, and policy issues', *China Economic Review*, 2(2), 1991, pp. 175–93. 233
- 21 'Tourism development in China: its nature, the changing market and business opportunities', *Journal of Vacation Marketing*, 2(2), 1996, pp. 123–36. 252
- 22 Jie Wen and Clem Tisdell, 'Spatial distribution of tourism in China: economic and other influences', *Tourism Economics*, 2(3), 1996, pp. 235–50. 266

PART IV TOURISM/RECREATIONAL USE OF NATURAL AREAS AND WILDLIFE: ISSUES IN ENVIRONMENTAL CONSERVATION

- 23 'The value of, demand for and supply of national parks – economic issues raised by recreational use', Board of Environmental Studies, *Research Paper No. 4*, 1974, University of Newcastle, pp. 1–22. 285
- 24 Derrin Davis and Clem Tisdell, 'Recreational scuba-diving and carrying capacity in marine protected areas', *Ocean & Coastal Management*, 26(1), 1995, pp. 19–40. 300
- 25 Derrin Davis and Clem Tisdell, 'Economic management of recreational scuba diving and the environment', *Journal of Environmental Management*, 48, 1996, pp. 229–48. 322
- 26 Derrin Davis and C.A. Tisdell, 'Tourist levies and willingness to pay for a whale shark experience', *Tourism Economics*, 5(2), 1998, pp. 161–74. 342

27. Clem Tisdell and Clevo Wilson, 'Tourism and the conservation of sea turtles: an Australian case study' 356

Name index 369

PART I

AN OVERVIEW

Topics and issues in tourism economics: an overview of this book

Introduction

The coverage of the subject of tourism economics is a wide and growing one (see Tisdell, 2000). The subject is not clearly delineated and consequently many of its topics overlap with other subject areas of economics and to a considerable extent involve multidisciplinary issues. Much of the subject is as yet little explored by economists and so it is still an area where new discoveries in economics and insights can be obtained with modest research effort.

In some ways, the nature of tourism economics has parallels with ecological and environmental economics and with development economics. All are multidisciplinary in nature, call for novel and varied methods of considering or analysing phenomena, normally provide only partial or qualified answers to questions, but at the same time yield exciting insights into 'real' world issues of contemporary significance.

The importance of tourism economics per se should not be underestimated. Tourism is the world's largest industry and for some time now has been its fastest growing industry. The economic significance of this composite industry is, however, only captured to a limited extent by conventional economic measures of the size of industries. These measures usually quantify only marketed, visible or physical attributes of an industry. Its non-marketed attributes are as a rule ignored. Nonetheless, the non-marketed value and impacts of the tourism industry are especially large so conventional indicators of industry size can be expected to underestimate significantly the importance of this industry from a holistic point of view.

The tourism industry relies heavily on commodities which are not marketed (have the characteristics of public goods or collective goods) or which are only partially marketed (involve spillovers or externalities). Its relationships to environments (natural, social and man-made) are both ones of dependence and ones of impact. In nearly all cases, tourism modifies its environs and the modifications, depending upon one's point of view, may be favourable or destructive. Furthermore, depending upon circumstances, tourism development can either be a force favouring the conservation of extant environments or one hastening their destruction or deterioration. This dichotomous character of tourism calls for considerable qualification of results from the economic analysis of tourism development and calls for a high degree of sensitivity in evaluating policies for tourism development.

The sustainability and development of tourism depends to a large extent on environmental conservation. Sometimes this involves conservation of natural environments but not always. Man-made and transformed natural environments may also be valued for tourism and recreation and there may be a desire to preserve these in their existing state. This is true for example of many heathlands in Europe, such as those of

the Yorkshire Moors, which have evolved as a result of the (commercial) grazing of sheep. In some portions of Europe, agricultural practices are subsidized to conserve agricultural landscapes considered to be beneficial to tourism and recreation. In Asia, for example in Japan and Indonesia, rice-field landscapes, especially those with terraces on mountainous terrain, often have tourist appeal. The assemblage of historical buildings in some cities (such as those of the Hanseatic towns of Europe) can create a desired man-made environment and help to support tourism and demands for their conservation.

In addition, it must be recognized that some environments can be improved in their appeal to humankind by further man-made modification. While the conservation of many existing environments may be socially desirable, the conservation of all such environments is not a virtue. The modification or alteration of some can be expected to enhance their value to human beings, and increase their value for tourism. Nevertheless, considerable care is required before deciding to forego extant environments, especially if the environmental changes envisaged are irreversible.

The focus in this book is more on natural environments than on cultural, social, man-made and significantly transformed environments. Nevertheless, much of the analysis outlined has relevance also to these other extant environments of importance for tourism and it needs to be recognized that even seemingly natural environments have been altered to some extent by human activity and development. Virtually, no environments remain in a pristine state free of human influences – human modification is more a matter of degree than whether such influence is present or absent.

The question might be posed of whether tourism is a 'green' industry. The answer seems to be that in some respects, it is and in other respects, it is not. It can provide an economic rationale for preserving natural or 'green' environments and cases will be considered in this book where it does so. That rationale does not, however, always translate into practice because of market and political failures; factors also considered in this book. Furthermore, the tourism industry can have adverse effects on the natural environments on which it depends as a result of pollution created by it or damage caused by tourists as well as degradation or some destruction of tourist assets needed to 'accommodate' the industry. But it can be 'kinder' to the natural environment than other industries and it may be possible to develop tourism in a way that has little adverse impact on the natural environment, as promoters of ecotourism hope to do. Prospects and possible pitfalls of ecotourism development are given considerable attention in this book.

A relevant factor in tourism development is the sustainability of tourism. Given interdependence between tourism and the environment, lack of sustainability of tourism may arise from factors endogenous to the tourism industry as well as exogenous ones. Considerable attention is given to the sustainability of tourism and to the unreliability of some measures used to indicate the sustainability of tourism.

Because this book explores interrelationships between tourism and ecological cum environmental economics, and considers tourism as part of development processes in less developed nations and regions, it is quite multidisciplinary in nature. Nevertheless, it demonstrates that even within a multidisciplinary context considerable scope exists for applying traditional tools of economic analysis, albeit in many cases in novel ways. Sometimes also economic analysis is used for heuristic or suggestive purposes

rather than for definitive results. Such an approach can provide useful insights but not final prescriptions.

Several articles in this book are of particular relevance to international economics, welfare economics and public economics and finance, and rely significantly on the application of microeconomics. Some, particularly those in Part III, are relevant to the economics of outdoor recreation. There is often a thin divide (or no definite divide) between recreational and leisure activities and tourism. According to the definition used by the World Tourism Organization (1997), a day trip to engage in outdoor recreation, for example, a visit and walk in a national park, does not constitute tourism whereas if the traveller stayed overnight, it would. But for most of the issues considered here such a conventional distinction is of little relevance.

The earliest of the collected essays in this book was written in 1974 and the latest in 2000 especially to fill gaps in this selection. Most have been reproduced from the originals by the facsimile method of production. However, several chapters have been typeset and thus their layout varies from the original.

The articles in this book are arranged in three parts. Part I concentrates on tourism economics and the environment, taking into account market and political failures. Some essays in this part analyse the implication of these factors for public economic/finance and for international economics. Part II presents several case studies plus analysis of tourism in developing countries or in less developed regions. It examines the role of tourism in economic development and associated environmental issues. Case studies include tourism in a remote part of Australia, ecotourism in India and Bangladesh, tourism development in the Maldives, and features of tourism development in China. However, it should be noted that case material is also used elsewhere in the book, for example, for Brazil in Chapter 12 and for the Galapagos Islands, which belong to Ecuador, in Chapter 10. Some ASEAN and Australian examples are also given in Part I. Part III focuses on environmental conservation and the use of natural areas and wildlife for recreation and tourism and includes case studies.

Some overlap occurs between the material covered in each of the parts, and a few articles might have been differently assigned to parts. For instance, one might wonder why the short article on seasonality of tourism (Chapter 13) is placed in Part II. But as will emerge from the following outline, there was special reason for placing it in Part II.

Part I Tourism and the environment: market and political failures and public economics

This part deals with market failures and political failures involving tourism and the environment and economic policies for coping with these. Coping mechanisms covered include policies involving public finance especially as far as inbound tourists are concerned, international cooperation and institutional changes, the development of ecotourism, measures to promote and assess the sustainability of tourism and planning for tourism development in the framework of total economic evaluation.

'Tourism, the environment and profit' (Chapter 2) begins from observations on the rapid growth of tourism in the Western Pacific and Australia and identifies several positive and negative environmental impacts of tourism. Drawing on the work of Pigram (1980), which it extends, it identifies several possible alternative consequences

of tourist development for environmental quality. In addition it presents a critical discussion of the concept of environmental carrying capacity. It suggests that the demand for tourist visits to an area can either be negatively or positively influenced by the number of tourist visits and therefore this demand curve might be adjusted in a similar manner to that suggested by Leibenstein (1950) in a wider context for social influences on demand. The possibility is allowed for that the number of tourist visits can alter from having a positive to negative influence as the number of tourist visits increase.

This chapter continues by analysing market failure due to unfavourable externalities from tourist visits. It suggests restrictions on tourism in some cases and outlines methods which governments may employ in these circumstances to appropriate any rents generated by their restrictive action. The desirability of encouraging monopolies in tourism at some sites is considered. Monopolies may be especially favoured from a national viewpoint when sites are mostly used by foreigners. A home government might however want to appropriate rents in this case, particularly if the tourist company operating the site is foreign owned and did not pay the full capitalized value of the property on purchase. In Australia, it seems that some foreign companies have exclusive property rights to several offshore islands in the Great Barrier Reef and to other strategic environmental assets used for tourism.

Two other issues considered are the spatial distribution of tourist attractions and their heterogeneity. It is argued that the private profit motive is unlikely to result in either being socially optimal. A serious risk exists of insufficient diversification of tourism environments, if one relies purely on market mechanisms and the political responses which 'tourist developers' encourage. However, political failure itself also constitutes a problem and, as shown, some democratic mechanisms of social decision-making, for example, majority voting, are defective in ensuring optimal economic outcomes from a social point of view – they may, for example, result in insufficient conservation to support tourism when greater conservation is socially optimal. Other matters raised include problems arising from common or open access to tourist resources, the need to take into account the 'non-use' values of a site in assessing its value, and the impact of tourist development on sustainability of community.

Chapter 3, 'Public finance and the appropriation of gains from international tourists: some theory with ASEAN and Australian illustrations', unlike Chapter 2, has its main emphasis on foreign tourists and begins from the assumption that the demand curve for inbound tourist visits to a country is downward sloping. This may be because of the relatively unique environmental assets of a country or for other reasons. Therefore, scope exists for governments to appropriate surpluses or rents from inbound tourists and to use this revenue to offset extra costs imposed on the government or on public finance by such tourists or to help compensate for any net losses imposed on domestic economic agents. (There were three minor printing errors in the original article. On page 19 in expression (8), '0.25' should have been '0.125' and on page 20, last line of the second paragraph ' b_1^2 ' should have been ' b_1 ', and the same in the third line of the third paragraph on this page. These have been adjusted in this book.)

Chapter 3 arose from the ASEAN–Australia Joint Research Project. It was part of a broader study on tourism, the environment, international trade and public economics (Tisdell, 1984) motivated by the perception that environments were important assets

supporting and sustaining demand for international tourism. Their relatively unique (and Ricardian) nature is an important source of consumers' surplus and provides a basis for extraction of rent from inbound tourists by governments. In Tisdell (1984) the environmental asset theory of demand for tourism is stressed and examples provided from ASEAN countries and Australian. Chapter 4 in this book draws upon Tisdell (1984) but goes beyond it.

In Chapter 4, 'National gains from international tourism in the light of environmental factors: further considerations', it is argued that most tourism is a composite and a mixed good because it relies both on private goods and on non-marketed components, such as environmental externalities or spillovers, although these are not the only non-marketed components. Usually, the non-marketed components of tourism act as a subsidy to the private tourist industry, but negative non-market effects are possible, in which case these act like a tax on the tourism industry. The relevant theory is outlined along with its implications for public finance thereby expanding Tisdell (1983). Also in Chapter 4 the traditional view that inbound tourism confers a net economic benefit on the host nation if the host's pricing is complete and efficient is subjected to critical examination. It is argued that such completeness is unlikely to be achievable in practice and, in any case, it is unlikely to be economic taking into account transaction costs. It is, therefore, shown that inbound tourism resulting in sufficient environmental damage could impose a net economic loss on the host nation and that a restriction on inbound tourism could increase economic welfare.

'International competition for tourist development: politics and global environmental degradation' (Chapter 5) makes substantial use of a paper prepared for a workshop held in 1994 at the East-West Center, Hawaii on the topic 'Trade and environment in Asia-Pacific'. It follows from Chapters 3 and 4 by expanding on the environmental asset theory of tourism generation and by introducing political factors which, because of international competition for tourist development, may result in international environmental deterioration. Lowering of environmental standards by one nation to attract investment in its tourist industry or other industries may well be countered by other nations doing likewise. As a consequence, environmental deterioration can spread internationally. A prisoner's dilemma type of problem is involved. The possibility of avoiding these problems by international cooperation and institutional development is considered.

Ecotourism is intended to increase the compatibility of tourism development with environmental conservation thereby sustaining extant environments and promoting the sustainability of tourism. Ecotourism aims to maintain a high environmental standard and, if successful, can avoid many of the problems mentioned in Chapter 5. The remaining essays in Part I give considerable attention to the economics of ecotourism, to environmental sustainability and to the sustainability of tourism.

'Ecotourism, economics, and the environment: observations from China' (Chapter 6) arose from an invited lecture given at the Southwest Forestry College, Kunming, China. It provides a general review of the economics of developing ecotourism and the relationship of ecotourism to the environment, illustrating the main points with observations from China. 'Investment in ecotourism: assessing its economics' (Chapter 7) is a companion article. It was written mainly to counter the blanket view that ecotourism development necessarily results in 'win-win' outcomes. The article