## Sustainable Tourism IV

## **WIT**PRESS

WIT Press publishes leading books in Science and Technology.

Visit our website for the current list of titles.

www.witpress.com

## **WIT**eLibrary

Home of the Transactions of the Wessex Institute.

Papers presented at Sustainable Tourism IV are archived in the WIT eLibrary in volume 139 of WIT Transactions on Ecology and the Environment (ISSN 1743-3541).

The WIT eLibrary provides the international scientific community with immediate and permanent access to individual papers presented at WIT conferences.

Visit the WIT eLibrary at www.witpress.com.

#### FOURTH INTERNATIONAL CONFERENCE ON SUSTAINABLE TOURISM

### Sustainable Tourism IV

#### CONFERENCE CHAIRMEN

#### C.A. Brebbia

Wessex Institute of Technology, UK

#### F.D. Pineda

The Complutense University, Spain

#### International Scientific Advisory Committee

O. Arizpe

S. Conway

S. Favro

A.Gomez Sal

H. Gotoh

I. Jurincic

N. Mohareb

I. Navis

Y. Ohe

T. Oyabu

U. Probstl

J. Soares

J.A. Williams

## Organised by

Wessex Institute of Technology, UK The Complutense University, Spain

#### Sponsored by

WIT Transactions on Ecology and the Environment

#### **WIT Transactions**

#### **Transactions Editor**

#### Carlos Brebbia

Wessex Institute of Technology Ashurst Lodge, Ashurst Southampton SO40 7AA, UK Email: carlos@wessex.ac.uk

#### **Editorial Board**

- B Abersek University of Maribor, Slovenia
- Y N Abousleiman University of Oklahoma, USA
- P L Aguilar University of Extremadura, Spain
- K S Al Jabri Sultan Qaboos University, Oman
- **E Alarcon** Universidad Politecnica de Madrid, Spain
- A Aldama IMTA, Mexico
- C Alessandri Universita di Ferrara, Italy
- **D Almorza Gomar** University of Cadiz, Spain
- B Alzahabi Kettering University, USA
- J A C Ambrosio IDMEC. Portugal
- A M Amer Cairo University, Egypt
- S A Anagnostopoulos University of Patras, Greece
- M Andretta Montecatini, Italy
- E Angelino A.R.P.A. Lombardia, Italy
- **H Antes** Technische Universitat Braunschweig, Germany
- M A Atherton South Bank University, UK
- A G Atkins University of Reading, UK
- **D** Aubry Ecole Centrale de Paris, France
- **H Azegami** Toyohashi University of Technology, Japan
- A F M Azevedo University of Porto, Portugal
- J Baish Bucknell University, USA
- **J M Baldasano** Universitat Politecnica de Catalunya, Spain
- J G Bartzis Institute of Nuclear Technology, Greece
- A Bejan Duke University, USA
- M P Bekakos Democritus University of Thrace, Greece

- G Belingardi Politecnico di Torino, Italy
- **R Belmans** Katholieke Universiteit Leuven, Belgium
- C D Bertram The University of New South Wales, Australia
- D E Beskos University of Patras, Greece
- **S K Bhattacharyya** Indian Institute of Technology, India
- E Blums Latvian Academy of Sciences, Latvia
- J Boarder Cartref Consulting Systems, UK
- **B Bobee** Institut National de la Recherche Scientifique, Canada
- H Boileau ESIGEC, France
- J J Bommer Imperial College London, UK
- M Bonnet Ecole Polytechnique, France
- C A Borrego University of Aveiro, Portugal
- A R Bretones University of Granada, Spain
- J A Bryant University of Exeter, UK
- **F-G Buchholz** Universitat Gesanthochschule Paderborn, Germany
- **M B Bush** The University of Western Australia, Australia
- F Butera Politecnico di Milano, Italy
- J Byrne University of Portsmouth, UK
- W Cantwell Liverpool University, UK
- **D J Cartwright** Bucknell University, USA
- **P G Carydis** National Technical University of Athens, Greece
- J J Casares Long Universidad de Santiago de Compostela, Spain
- M A Celia Princeton University, USA
- A Chakrabarti Indian Institute of Science, India
- A H-D Cheng University of Mississippi, USA

- J Chilton University of Lincoln, UK
- C-L Chiu University of Pittsburgh, USA
- H Choi Kangnung National University, Korea
- A Cieslak Technical University of Lodz, Poland
- S Clement Transport System Centre, Australia
- M W Collins Brunel University, UK
- **J J Connor** Massachusetts Institute of Technology, USA
- M C Constantinou State University of New York at Buffalo, USA
- D E Cormack University of Toronto, Canada
- M Costantino Royal Bank of Scotland, UK
- D F Cutler Royal Botanic Gardens, UK
- W Czyczula Krakow University of Technology, Poland
- M da Conceicao Cunha University of Coimbra, Portugal
- L Dávid Károly Róbert College, Hungary
- A Davies University of Hertfordshire, UK
- M Davis Temple University, USA
- A B de Almeida Instituto Superior Tecnico, Portugal
- E R de Arantes e Oliveira Instituto Superior Tecnico, Portugal
- L De Biase University of Milan, Italy
- **R de Borst** Delft University of Technology, Netherlands
- G De Mey University of Ghent, Belgium
- A De Montis Universita di Cagliari, Italy
- A De Naever Universiteit Ghent, Belgium
- **W P De Wilde** Vrije Universiteit Brussel, Belgium
- L Debnath University of Texas-Pan American, USA
- N J Dedios Mimbela Universidad de Cordoba, Spain
- **G Degrande** Katholieke Universiteit Leuven, Belgium
- S del Giudice University of Udine, Italy
- **G Deplano** Universita di Cagliari, Italy
- I Doltsinis University of Stuttgart, Germany
- M Domaszewski Universite de Technologie de Belfort-Montbeliard, France
- J Dominguez University of Seville, Spain
- **K Dorow** Pacific Northwest National Laboratory, USA
- W Dover University College London, UK

- C Dowlen South Bank University, UK
- **J P du Plessis** University of Stellenbosch, South Africa
- R Duffell University of Hertfordshire, UK
- A Ebel University of Cologne, Germany
- E E Edoutos Democritus University of Thrace Greece
- G K Egan Monash University. Australia
- K M Elawadly Alexandria University, Egypt
- K-H Elmer Universitat Hannover. Germany
- **D Elms** University of Canterbury, New Zealand
- M E M El-Sayed Kettering University, USA
- **D M Elsom** Oxford Brookes University, UK
- A El-Zafrany Cranfield University, UK
- F Erdogan Lehigh University, USA
- F P Escrig University of Seville, Spain
- **D J Evans** Nottingham Trent University, UK
- J W Everett Rowan University, USA
- M Faghri University of Rhode Island, USA
- R A Falconer Cardiff University. UK
- NATIONAL CARACTER CAR
- M N Fardis University of Patras, Greece
- P Fedelinski Silesian Technical University, Poland
- H J S Fernando Arizona State University, USA
- S Finger Carnegie Mellon University, USA
- J I Frankel University of Tennessee, USA
- **D M Fraser** University of Cape Town, South Africa
- M J Fritzler University of Calgary, Canada
- U Gabbert Otto-von-Guericke Universitat Magdeburg, Germany
- G Gambolati Universita di Padova, Italy
- C J Gantes National Technical University of Athens. Greece
- L Gaul Universitat Stuttgart, Germany
- **A Genco** University of Palermo, Italy
- N Georgantzis Universitat Jaume I, Spain
- P Giudici Universita di Pavia, Italy
- **F Gomez** Universidad Politecnica de Valencia, Spain
- **R Gomez Martin** University of Granada, Spain
- D Goulias University of Maryland, USA
- K G Goulias Pennsylvania State University,
- F Grandori Politecnico di Milano, Italy
- W E Grant Texas A & M University, USA

- S Grilli University of Rhode Island, USA
- R H J Grimshaw Loughborough University, UK
- **D Gross** Technische Hochschule Darmstadt, Germany
- **R Grundmann** Technische Universitat Dresden, Germany
- A Gualtierotti IDHEAP, Switzerland
- **R C Gupta** National University of Singapore, Singapore
- J M Hale University of Newcastle, UK
- **K Hameyer** Katholieke Universiteit Leuven, Belgium
- C Hanke Danish Technical University, Denmark
- **K Hayami** National Institute of Informatics, Japan
- Y Hayashi Nagoya University, Japan
- L Haydock Newage International Limited, UK
- **A H Hendrickx** Free University of Brussels, Belgium
- C Herman John Hopkins University, USA
- S Heslop University of Bristol, UK
- I Hideaki Nagoya University, Japan
- D A Hills University of Oxford, UK
- W F Huebner Southwest Research Institute, USA
- JAC Humphrev Bucknell University, USA
- M Y Hussaini Florida State University, USA
- W Hutchinson Edith Cowan University, Australia
- T H Hyde University of Nottingham, UK
- M Iguchi Science University of Tokyo, Japan
- D B Ingham University of Leeds, UK
- L Int Panis VITO Expertisecentrum IMS, Belgium
- N Ishikawa National Defence Academy, Japan
- J Jaafar UiTm. Malaysia
- W Jager Technical University of Dresden, Germany
- Y Jaluria Rutgers University, USA
- C M Jefferson University of the West of England, UK
- **P R Johnston** Griffith University, Australia
- **D R H Jones** University of Cambridge, UK
- N Jones University of Liverpool, UK
- **D Kaliampakos** National Technical University of Athens, Greece
- N Kamiya Nagoya University, Japan

- D L Karabalis University of Patras, Greece
- M Karlsson Linkoping University, Sweden
- T Katavama Doshisha University, Japan
- **K L Katsifarakis** Aristotle University of Thessaloniki. Greece
- J T Katsikadelis National Technical University of Athens, Greece
- E Kausel Massachusetts Institute of Technology, USA
- **H Kawashima** The University of Tokyo, Japan
- **B A Kazimee** Washington State University, USA
- S Kim University of Wisconsin-Madison, USA
- **D Kirkland** Nicholas Grimshaw & Partners Ltd. UK
- E Kita Nagoya University, Japan
- A S Kobayashi University of Washington, USA
- T Kobayashi University of Tokyo, Japan
- D Koga Saga University, Japan
- S Kotake University of Tokyo, Japan
- **A N Kounadis** National Technical University of Athens, Greece
- W B Kratzig Ruhr Universitat Bochum, Germany
- T Krauthammer Penn State University, USA
- C-H Lai University of Greenwich, UK
- M Langseth Norwegian University of Science and Technology, Norway
- **B** S Larsen Technical University of Denmark, Denmark
- F Lattarulo Politecnico di Bari, Italy
- A Lebedev Moscow State University, Russia
- L J Leon University of Montreal, Canada
- **D Lewis** Mississippi State University, USA
- **S Ighobashi** University of California Irvine, USA
- **K-C Lin** University of New Brunswick, Canada
- A A Liolios Democritus University of Thrace, Greece
- **S Lomov** Katholieke Universiteit Leuven, Belgium
- J W S Longhurst University of the West of England, UK
- **G Loo** The University of Auckland, New Zealand

- J Lourenco Universidade do Minho, Portugal
- **J E Luco** University of California at San Diego, USA
- H Lui State Seismological Bureau Harbin,
- C J Lumsden University of Toronto, Canada
- L Lundqvist Division of Transport and Location Analysis, Sweden
- T Lyons Murdoch University, Australia
- Y-W Mai University of Sydney, Australia
- M Majowiecki University of Bologna, Italy
- D Malerba Università degli Studi di Bari, Italy
- G Manara University of Pisa, Italy
- B N Mandal Indian Statistical Institute, India
- Ü Mander University of Tartu. Estonia
- H A Mang Technische Universität Wien, Austria
- **G D Manolis** Aristotle University of Thessaloniki, Greece
- W J Mansur COPPE/UFRJ, Brazil
- N Marchettini University of Siena, Italy
- J D M Marsh Griffith University, Australia
- J F Martin-Duque Universidad Complutense, Spain
- T Matsui Nagoya University, Japan
- **G Mattrisch** DaimlerChrysler AG, Germany
- F M Mazzolani University of Naples "Federico II", Italy
- K McManis University of New Orleans, USA
- **A C Mendes** Universidade de Beira Interior, Portugal
- **R A Meric** Research Institute for Basic Sciences, Turkey
- J Mikielewicz Polish Academy of Sciences, Poland
- N Milic-Frayling Microsoft Research Ltd, UK
- **R A W Mines** University of Liverpool, UK
- C A Mitchell University of Sydney, Australia
- K Miura Kajima Corporation, Japan
- A Mivamoto Yamaguchi University, Japan
- T Mivoshi Kobe University, Japan
- **G Molinari** University of Genoa, Italy
- T B Moodie University of Alberta, Canada
- D B Murray Trinity College Dublin, Ireland
- **G Nakhaeizadeh** DaimlerChrysler AG, Germany
- M B Neace Mercer University, USA

- D Necsulescu University of Ottawa, Canada
- F Neumann University of Vienna, Austria
- S-I Nishida Saga University, Japan
- H Nisitani Kyushu Sangyo University, Japan
- B Notaros University of Massachusetts, USA
- P O'Donoghue University College Dublin, Ireland
- R O O'Neill Oak Ridge National Laboratory, USA
- M Ohkusu Kyushu University, Japan
- G Oliveto Universitá di Catania, Italy
- R Olsen Camp Dresser & McKee Inc., USA
- **E Oñate** Universitat Politecnica de Catalunya, Spain
- K Onishi Ibaraki University, Japan
- P H Oosthuizen Queens University, Canada
- E L Ortiz Imperial College London, UK
- E Outa Waseda University, Japan
- A S Papageorgiou Rensselaer Polytechnic Institute, USA
- J Park Seoul National University, Korea
- **G Passerini** Universita delle Marche, Italy
- **B C Patten** University of Georgia, USA
- **G Pelosi** University of Florence, Italy
- **G G Penelis** Aristotle University of Thessaloniki, Greece
- W Perrie Bedford Institute of Oceanography, Canada
- R Pietrabissa Politecnico di Milano, Italy
- H Pina Instituto Superior Tecnico, Portugal
- M F Platzer Naval Postgraduate School, USA
- **D Poliak** University of Split, Croatia
- V Popov Wessex Institute of Technology, UK
- **H Power** University of Nottingham, UK
- **D Prandle** Proudman Oceanographic Laboratory, UK
- M Predeleanu University Paris VI, France
- M R I Purvis University of Portsmouth, UK
- I S Putra Institute of Technology Bandung, Indonesia
- Y A Pykh Russian Academy of Sciences, Russia
- F Rachidi EMC Group, Switzerland
- M Rahman Dalhousie University, Canada
- K R Rajagopal Texas A & M University, USA
- T Rang Tallinn Technical University, Estonia
- J Rao Case Western Reserve University, USA

- **A M Reinhorn** State University of New York at Buffalo, USA
- A D Rey McGill University, Canada
- **D N Riahi** University of Illinois at Urbana-Champaign, USA
- **B Ribas** Spanish National Centre for Environmental Health, Spain
- **K Richter** Graz University of Technology, Austria
- S Rinaldi Politecnico di Milano, Italy
- **F Robuste** Universitat Politecnica de Catalunya, Spain
- J Roddick Flinders University, Australia
- **A C Rodrigues** Universidade Nova de Lisboa, Portugal
- F Rodrigues Poly Institute of Porto, Portugal
- C W Roeder University of Washington, USA
- J M Roesset Texas A & M University, USA
- W Roetzel Universitaet der Bundeswehr Hamburg, Germany
- V Roje University of Split, Croatia
- R Rosset Laboratoire d'Aerologie, France
- J L Rubio Centro de Investigaciones sobre Desertificacion, Spain
- T J Rudolphi Iowa State University, USA
- S Russenchuck Magnet Group, Switzerland
- H Ryssel Fraunhofer Institut Integrierte Schaltungen, Germany
- S G Saad American University in Cairo, Egypt
- M Saiidi University of Nevada-Reno, USA
- **R San Jose** Technical University of Madrid, Spain
- F J Sanchez-Sesma Instituto Mexicano del Petroleo, Mexico
- B Sarler Nova Gorica Polytechnic, Slovenia
- **S A Savidis** Technische Universitat Berlin, Germany
- A Savini Universita de Pavia, Italy
- G Schmid Ruhr-Universitat Bochum, Germany
- R Schmidt RWTH Aachen, Germany
- **B Scholtes** Universitate of Kassel, Germany
- W Schreiber University of Alabama, USA
- A P S Selvadurai McGill University, Canada
- J J Sendra University of Seville, Spain
- **J J Sharp** Memorial University of Newfoundland, Canada
- **Q Shen** Massachusetts Institute of Technology, USA
- X Shixiong Fudan University, China

- G C Sih Lehigh University, USA
- L C Simoes University of Coimbra, Portugal
- A C Singhal Arizona State University, USA P Skerget University of Maribor, Slovenia
- J Sladek Slovak Academy of Sciences,
- Slovakia

  V Sladek Slovak Academy of Sciences,
  Slovakia
- A C M Sousa University of New Brunswick, Canada
- H Sozer Illinois Institute of Technology, USA
- D B Spalding CHAM, UK
- P D Spanos Rice University, USA
- T Speck Albert-Ludwigs-Universitaet Freiburg, Germany
- C C Spyrakos National Technical University of Athens, Greece
- I V Stangeeva St Petersburg University, Russia
- J Stasiek Technical University of Gdansk, Poland
- G E Swaters University of Alberta, Canada
- S Syngellakis University of Southampton, UK
- J Szmyd University of Mining and Metallurgy, Poland
- S T Tadano Hokkaido University, Japan
- H Takemiya Okayama University, Japan
- I Takewaki Kyoto University, Japan
- C-L Tan Carleton University, Canada
- M Tanaka Shinshu University, Japan
- E Taniguchi Kyoto University, Japan
- **S Tanimura** Aichi University of Technology, Japan
- J L Tassoulas University of Texas at Austin,
- M A P Taylor University of South Australia, Australia
- A Terranova Politecnico di Milano. Italy
- E Tiezzi University of Siena, Italy
- **A G Tijhuis** Technische Universiteit Eindhoven, Netherlands
- T Tirabassi Institute FISBAT-CNR, Italy
- **S Tkachenko** Otto-von-Guericke-University, Germany
- N Tosaka Nihon University, Japan
- **T Tran-Cong** University of Southern Queensland, Australia
- R Tremblay Ecole Polytechnique, Canada

- I Tsukrov University of New Hampshire, USA
- **R Turra** CINECA Interuniversity Computing Centre, Italy
- **S G Tushinski** Moscow State University, Russia
- J-L Uso Universitat Jaume I, Spain
- E Van den Bulck Katholieke Universiteit Leuven, Belgium
- D Van den Poel Ghent University, Belgium
- **R van der Heijden** Radboud University, Netherlands
- **R van Duin** Delft University of Technology, Netherlands
- P Vas University of Aberdeen, UK
- W S Venturini University of Sao Paulo, Brazil
- R Verhoeven Ghent University, Belgium
- A Viguri Universitat Jaume I, Spain
- Y Villacampa Esteve Universidad de Alicante, Spain
- F F V Vincent University of Bath, UK
- S Walker Imperial College, UK
- G Walters University of Exeter, UK

- **B Weiss** University of Vienna, Austria
- **H Westphal** University of Magdeburg, Germany
- J R Whiteman Brunel University, UK
- **Z-Y Yan** Peking University, China
- **S Yanniotis** Agricultural University of Athens, Greece
- A Yeh University of Hong Kong, China
- J Yoon Old Dominion University, USA
- K Yoshizato Hiroshima University, Japan
- T X Yu Hong Kong University of Science & Technology, Hong Kong
- **M Zador** Technical University of Budapest, Hungary
- K Zakrzewski Politechnika Lodzka, Poland
- **M Zamir** University of Western Ontario, Canada
- R Zarnic University of Ljubljana, Slovenia
- **G Zharkova** Institute of Theoretical and Applied Mechanics, Russia
- N Zhong Maebashi Institute of Technology, Japan
- H G Zimmermann Siemens AG, Germany

# **Sustainable Tourism IV**

#### **Editors**

**C.A. Brebbia**Wessex Institute of Technology, UK

&

**F.D. Pineda**The Complutense University, Spain



#### C.A. Brebbia

Wessex Institute of Technology, UK

#### F.D. Pineda

The Complutense University, Spain

#### Published by

#### WIT Press

Ashurst Lodge, Ashurst, Southampton, SO40 7AA, UK Tel: 44 (0) 238 029 3223; Fax: 44 (0) 238 029 2853 E-Mail: witpress@witpress.com http://www.witpress.com

For USA, Canada and Mexico

#### **Computational Mechanics Inc**

25 Bridge Street, Billerica, MA 01821, USA Tel: 978 667 5841; Fax: 978 667 7582 E-Mail: infousa@witpress.com http://www.witpress.com

British Library Cataloguing-in-Publication Data

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

ISBN: 978-1-84564-458-1 ISSN: 1746-448X (print) ISSN: 1743-3541 (online)

The texts of the papers in this volume were set individually by the authors or under their supervision. Only minor corrections to the text may have been carried out by the publisher.

No responsibility is assumed by the Publisher, the Editors and Authors for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of any methods, products, instructions or ideas contained in the material herein. The Publisher does not necessarily endorse the ideas held, or views expressed by the Editors or Authors of the material contained in its publications.

© WIT Press 2010

Printed in Great Britain by the MPG Book Group

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, photocopying, recording, or otherwise, without the prior written permission of the Publisher.

### **Preface**

Sustainability is nowadays a concept that requires explanation because of the subjective way in which it is understood by different parties. People almost always refer to the idea of maintaining the proper use of natural resources, but 'good' use also appears to be a subjective term. What may appear a sensible sustainable application to one observer may not be such when looked at from a different perspective. The idea of a sustainable system is, however, well defined and formalized in ecological theory (the exploitation rate of a system must be less than its turnover) and, moreover, the concept of natural resource has also been defined.

A natural resource from society's point of view can be defined as any manifestation of matter, energy or space that man can use. Matter, for instance, could consist of non-renewables such as minerals as well as renewable resources of which timber is perhaps the best known example. The energy resource appears to be the most important in the current debate on sustainability – the amount of energy actually required by 'modern society' and the importance of the supply thereof from renewable sources, such as wind, solar radiation or tides.

The current economic crisis has highlighted the importance of sustainability and the end of the system on which modern society has been organised for the last three centuries. It also indicates the dawn of a new era with a more rational use of materials and energy. It is also to be hoped that in the future resources will be shared more equally amongst the world population. Not long ago Jeremy Rifkin predicted that "in this century, less than 5% of the population will provide the goods and services that the rest will consume", so that a massive labour force will not be required. This statement may not be much of an exaggeration. The scenario is set for a different type of society, one in which three conditions converge: planning and occupation of space; the natural and cultural landscape being considered as a resource and a suitable amount of leisure time becoming available.

Leisure and recreation will be very different from what we know today, given the society envisaged by Rifkin. We will not need to be largely engaged in production,

but rather in the development of knowledge and this will become a major activity generated both at work and in leisure. Society must be able to organise its leisure time while enjoying a landscape encompassing education, culture and nature.

The landscape to be enjoyed is both the natural and the cultural one. There are natural landscapes in the world which will require a higher degree of protection. Biodiversity should be cherished and the subject of our constant attention. The cultural landscape will blend within this vision creating a process of constant education and knowledge production. It is in this context that cities and metropolitan areas seek the emergence of new perspectives, such as in the case of the metropolitan area of New York which is striving to become one of the UNESCO Biosphere Reserves. Traditional industrial landscapes are also an important source of education in a new technological world. All these pose challenges for experts in leisure and recreation, who should consider in their work the importance of education and knowledge.

These ideas are the basis of the Series of International Conferences on Sustainable Tourism which has now become a well established forum for discussion of new developments in this important field. The Conference has been successfully held in Segovia (2004), Bologna (2006) and Malta (2008). This volume contains most of the papers presented at the 4<sup>th</sup> meeting held in the Campus of the Wessex Institute of Technology in the New Forest, UK. The meeting – as well as all the others – was co-organised by that Institution and the Complutense University of Madrid in Spain. The Editors gratefully acknowledge the support of both as well as the help provided by the members of the International Scientific Advisory Committee and other colleagues who helped review the papers published in this book.

#### The Editors

New Forest, UK, 2010

## **Contents**

## **Section 1: Tourism strategies**

Strategies for tourism development in peripheral areas in the alpine area	
U. Pröbstl	3
Tourism strategy at Swedish Transport Administration  C. Ahnlund	13
Tourism strategies for the renovation of mature coastal tourist destinations in Spain	
F. Vera-Rebollo & I. Rodríguez-Sánchez	21
Strategies for the creation of tourism routes aimed at the development of local communities: a study in Brazil S. F. Queiroz	35
Relationship between marketing and community involvement: two significant factors for tourism strategies S. F. Mostafavi Shirazi & A. P. Mat Som	47
Energetic tourism: exploring the experience quality of renewable energies as a new sustainable tourism market	
A. Jiricka, B. Salak, R. Eder, A. Arnberger & U. Pröbstl	55
Section 2: Emergent strategies for tourism development	
Ecotourism as a catalyst for social resiliency and the cultural preservation of the Mandan, Hidatsa and Arikara tribes	71
C. A. Wiley	/ 1

An extended VRIO model as a framework for sustainable tourism planning  J. Simão	87
Beach quality assessment as a tool for promoting sustainability in tourist islands: the case study of Oléron Island, France <i>V. Duvat</i>	99
How to use blogs in your travel marketing channel mix  L. Huang	111
A web-GIS for the choice of the path in regional greenways  G. Salvo & B. Lo Casto	123
Section 3: Modelling	
Tourism modelling for the space coast C. Cook, F. DeCaro & N. DeCaro	133
Determination criteria for national water tourism routes  A. Macerinskiene	145
Planning and management strategies in tourist areas: guidelines for a sustainable development of the Durres Bay district <i>C. Cosmi, S. Fiore &amp; P. Ragone</i>	159
Investigating geotourism capabilities of the Gavkhoni Wetland according to the SWOT model  H. Beigi & P. Pakzad	169
Section 4: Environmental issues	
Are resort operators in the ecotourism area demanding an environmental protection culture? The case of Lake Kenyir, Malaysia N. Yusof, I. Said, Z. Osman & M. F. Che Daud	183
Is water an indulgence? What marketing messages say about water use in tourism accommodation in a dryland region <i>L. V. Lehmann</i>	195
Potentialities planning of sustainable ecotourism in the Kingdom of Saudi Arabia	205
A. O. Al-Sulbi	203

## Section 5: Climate change and the effects of natural hazards on tourism

The effect of climate change in the future development of tourism: a theoretical approach <i>G. Galanos</i>	217
Coastal tourism, climate change uncertainties and adaptation options  A. Magnan	229
The impact of climate change on tourism in Egypt as perceived by both policymakers and tourism managers  I. Shaaban & Y. Ramzy	241
The effect of natural hazards and disasters for tourism: case studies in the Carpathian Basin  L. David	253
Section 6: Tourism and protected areas	
Sustainable tourism planning for the only coral reef in the Gulf of California: Cabo Pulmo national park  O. Arizpe & M. Covarrubias	263
Feasibility analysis of collecting environmental protection tax from tourists in an environmental conservation area: a case study of Miyun County Y. Li, L. Guo, W. Zhu & F. Chen	275
Protected areas: a valid argument for the renovation and diversification of mature coastal tourist destinations in Spain?  I. Rodríguez, M. P. Such & M. Capdepón	
Ecotourism in Brazil: geographical perspectives of development in protected areas  N. M. Castilho da Costa & V. Castilho da Costa	295
Section 7: Tourism impact	
Landscape perception of local population: the relationship between ecological characteristics, local society and visitor preferences <i>P. Diaz, D. Ruiz-Labourdette, A. R. Darias, A. Santana, M. F. Schmitz &amp; F. D. Pineda</i>	309

Sustainable tourism development in the Masai Mara National Reserve, Kenya, East Africa  J. Onchwati, H. Sommerville & N. Brockway
Study on shopping fraud in package tours: cases in mainland China, Hong Kong, Macao, and South-Eastern Asia SP. Chiu
The wicked problem of tourism: economic benefits versus socio-cultural impacts  M. Odeh
Sustainable development through desert tourism planning: a SWOT approach M. Sabokkhiz & S. Sabokkhiz
Section 8: Art, architecture and culture
Integrating socialist cultural heritage into the tourism offer of the municipality of Koper  G. Balažič
The conservation of nine units market village, Bangplama district, Supanburi province, Thailand DN. Suephakdee
The changing faces of the concrete balustrade in Nigerian vernacular architecture  C. O. Osasona & F. O. Ewemade
Dynamic of Boon Kam Fa tradition of Phuan Ethnic Group in the Thailand tourism context  B. Aneksuk & A. Ruangkamnerd
Culture and tourism: perspectives of foreigners on the Brazilian carnival  A. F. Porto
Section 9: Rural tourism
The demand trend of Italian agritourism  Y. Ohe & A. Ciani 437

The Baja 1000 car race and its impact on rural communities  J. Soares, R. Blanco, J. Tapia, J. R. Lerma, E. Inzunza  & S. Avilés
A regional cuisine database to support the revitalization of a local area in Japan <i>T. Oyabu</i>
Planning forest recreation: environmental economic instruments and the public participation <i>F. Oliveira, P. Pintassilgo, I. Mendes &amp; J. A. Silva</i>
Section 10: Community involvement
Influencing community mindsets: the role of outreach programs in achieving urban sustainability  I. Navis, S. Conway, R. Lucchesi, J. Roberts, A. Wadhwa,  P. Washeba & R. Cameron
From fashion to 'tangible-intangible' action: local communities 'culturizing' new tourism development  J. Francis-Lindsay
Effects of place attachment on participation intentions for local tourism development <i>H. Zhang &amp; S. L. Lei</i>
The establishment of a sustainable management policy for coastal foraging (Oléron, France)  G. Mossot & V. Duvat
Section 11: Tourism as a tool of development
The development of community-based tourism business in Phu Khratae Island, Nonklang Sub-district, Phiboonmangsaharn District, Ubonratchathani Province, Thailand P. Somnuek
Tourism as a tool of development: the case study of Siwa oasis –  Egypt western desert  D. F. Amara

Tourism as a tool of community development: an ecotourism project in Cantanhez, Guinea-Bissau  F. Oliveira & F. Silva	551
Factor contributing to the success of cultural event management: The Phanom Rung Festival, Burirum province, Thailand P. Thanee	563
Energy tourism or spiritual tourism case study: Takht-e Soleiman, Iran S. Sanaye Goldouz & S. A. Ataie	571
Dark tourism in Romania: from concept to reality  L. Ghetau & L. V. Esanu	581
Author Index	591