Preface

Volume I

Section 1
Fundamental Concepts and Theories

This section introduces some of the principle topics currently being discussed in Sustainable Practices research. It is undeniable that the world is changing dramatically—socially, economically, and ecologically—and careful attention to these changes is imperative to weathering them effectively. The authors in this section evaluate the current status of ecology, industry, and urban development in order to support new strategies for adaptation and success. In the opening 15 chapters of this extensive reference source, readers will obtain a clear understanding of the fundamental concepts and theories integral to the field of Sustainable Practices.

Chapter 1
Environmental Rationality: Innovation in Thinking for Sustainability ................................................. 1
            Enrique Leff, Universidad Nacional Autónoma de México, Mexico

Chapter 2
Climate Change and Sustainable Development in Agriculture and Forestry ................................. 18
            Vesna Popović, Institute of Agricultural Economics, Serbia
            Nada Mijailović, Institute of Agricultural Economics, Serbia

Chapter 3
A Paradigm Shift towards Urban Resilience .......................................................... 49
            Özge Yalciner Ercoskun, Gazi University, Turkey

Chapter 4
Emissions Trading Schemes in the Transportation Sector .......................................................... 65
            Alexandra Maragkogianni, Technical University of Crete, Greece
            Spiros Papaefthimiou, Technical University of Crete, Greece
            Constantin Zopoundis, Technical University of Crete, Greece
Chapter 5
Purchasing Green Transport and Logistics Services: Implications from the Environmental Sustainability Attitude of 3PLs ................................................................. 86
   Pietro Evangelista, IRAT-CNR, Italy & University of Naples Federico II, Italy
   Maria Huge-Brodin, Linköping University, Sweden
   Karin Isaksson, Linköping University, Sweden
   Edward Sweeney, National Institute for Transport and Logistics, Ireland & Dublin Institute of Technology, Ireland

Chapter 6
The Ecological Industrialism Bet ................................................................. 103
   Rinaldo C. Michelini, PMAR Lab, Italy
   Roberto P. Razzoli, PMAR Lab, Italy

Chapter 7
GreenPM®: The Basic Principles for Applying an Environmental Dimension to Project Management................................................................. 121
   Tom Mochal, TenStep, Inc., USA
   Andrea Krasnoff, TenStep, Inc., USA

Chapter 8
Resource Conservation: Key Elements in Sustainable Rural Development............................................. 140
   Cristian Iojă, University of Bucharest, Romania
   Mihai Răzvan Niță, University of Bucharest, Romania
   Ileana Georgeta Stupariu, University of Bucharest, Romania

Chapter 9
Approaches for Measuring Sustainability ............................................................. 158
   Evangelos Grigoroudis, Technical University of Crete, Greece
   Vassilis S. Kouikoglou, Technical University of Crete, Greece
   Yannis A. Phillis, Technical University of Crete, Greece

Chapter 10
Diffusion and Adoption of Innovations for Sustainability ............................................................. 185
   Helen E. Muga, University of Mount Union, USA
   Ken D. Thomas, Auburn University, USA

Chapter 11
Integrating Project Strategy for Sustainable Development: A Conceptual Framework ......................... 201
   Lynn A. Keeys, SKEMA Business School, France
   Martina Huemann, WU Vienna University of Economics and Business, Austria
   Rodney Turner, SKEMA Business School, France
Chapter 12  
EU—GCC Clean Energy Cooperation: From Concepts to Action

Haris Doukas, National Technical University of Athens, Greece  
Ioanna Makarouni, National Technical University of Athens, Greece  
Charikleia Karakosta, National Technical University of Athens, Greece  
Vangelis Marinakis, National Technical University of Athens, Greece  
John Psarras, National Technical University of Athens, Greece

Chapter 13  
Multi-Criteria Decision Aid for Sustainable Energy Prioritization Using Fuzzy Axiomatic Design

Basar Oztaysi, Istanbul Technical University, Turkey  
Mine Isik, Istanbul Technical University, Turkey  
Secil Ercan, Istanbul Technical University, Turkey

Chapter 14  
Cooling and Heating with Ground Source Energy

Abdeen Mustafa Omer, Energy Research Institute, Sudan

Chapter 15  
Towards Energy Sustainability in Federated and Interoperable Clouds

Antonio Celesti, University of Messina, Italy  
Antonio Puliafito, University of Messina, Italy  
Francesco Tusa, University of Messina, Italy  
Massimo Villari, University of Messina, Italy

Section 2  
Tools and Technologies

This section describes emerging technologies in the field of Sustainable Practices that can be of use to conservationists and industrialists alike. A large part of innovation is developing the tools necessary to meet new challenges and explore new ideas. Particular topics discussed in this section include advances in harnessing solar energy efficiently, using energy resources more effectively, and constructing urban environments to minimize their impact on local ecosystems. With 18 chapters, this section offers a broad treatment of some of the many tools and technologies within Sustainable Practices.

Chapter 16  
Productive Use of Renewable Energy (PURE) for Economic Development in Developing Countries

Phillip Olla, Madonna University, USA  
Nkemdilim Onwudinjo, Madonna University, USA

Chapter 17  
Control and Conversion of Solar Power

Liping Guo, Northern Illinois University, USA
Chapter 18
A Comparative Study on a Built Sun Tracker and Fixed Converter Panels ............................ 335
Farzin Shama, Razi University, Iran
Gholam Hossein Roshani, Shahid Beheshti University, Iran
Sobhan Roshani, Razi University, Iran
Arash Ahmadi, Razi University, Iran
Saber Karami, Amirkabir University of Technology, Iran

Chapter 19
Solar Photovoltaic Servo Tracking Controlled System .......................................................... 348
Murad Shibli, Abu Dhabi Polytechnic, Institute of Applied Technologies, UAE

Chapter 20
Polymer Solar Cells .................................................................................................................. 365
Catalin Zaharia, Polytechnic University of Bucharest, Romania

Chapter 21
Green, Sustainable, or Clean: What Type of IT/IS Technologies Will we Need in the Future? .... 384
Albena Antonova, Sofia University, Bulgaria

Chapter 22
Issues and Technologies of Effective Energy Management .................................................. 397
Edward T. Chen, University of Massachusetts – Lowell, USA

Chapter 23
Energy Optimization of Power Station for a Small Research Institute .................................. 413
Ani Vincent Anayochukwu, University of Nigeria, Nigeria

Chapter 24
A Location-Based Power Conservation Scheme for MANETs: A Step towards Green
Communications ...................................................................................................................... 429
Hussein Al-Bahadili, Petra University, Jordan
Azmi Halasa, The Arab Academy for Banking and Financial Sciences, Jordan

Chapter 25
Data-Stream-Driven Computers are Power and Energy Efficient ........................................ 447
Abdelghani Renbi, Luleå University of Technology, Sweden

Chapter 26
Energy-Efficient Optical Interconnects in Cloud Computing Infrastructures ....................... 463
Christoforos Kachris, Athens Information Technology, Greece
Ioannis Tomkos, Athens Information Technology, Greece
Chapter 27
Display Energy Management based on Eye Tracking ........................................................................... 479
Vasily G. Moshnyaga, Fukuoka University, Japan

Chapter 28
Green Communications: Realizing Environmentally Friendly, Cost Effective, and Energy Efficient Wireless Systems ........................................................................................................................................ 495
Haris I. Volos, Virginia Tech, USA
Dinesh Datla, Virginia Tech, USA
Xuetao Chen, Virginia Tech, USA
An He, Virginia Tech, USA
Ashwin Amanna, Virginia Tech, USA
Timothy R. Newman, University of Maryland, USA
S. M. Shajedul Hasan, Virginia Tech, USA
Jeffery H. Reed, Virginia Tech, USA
Tamal Bose, Virginia Tech, USA

Chapter 29
Earth Building Materials, Production, and Construction Techniques .................................................. 517
Hamed Niroumand, National University of Malaysia, Malaysia
M.F.M Zain, National University of Malaysia, Malaysia
Sanaz Naghavi Alhosseni, Amirkabir University of Technology, Iran

Chapter 30
3D Digital City Platforms as Collaborative and Decision-Making Tools for Small Municipalities and Rural Areas .................................................................................................................................. 537
Barbara L. Maclennan, West Virginia University, USA
Susan J. Bergeron, Coastal Carolina University, USA

Chapter 31
Web-Based Digital Habitat Ecosystems for Sustainable Built Environments ......................................... 551
Kamatchi Pillai, Victoria University, Australia
Cagil Ozansoy, Victoria University, Australia

Chapter 32
ICT Based Pest Management System for Sustainable Pulse Production: A Case Study ....................... 566
O P Sharma, National Centre for Integrated Pest Management, India
Niranjan Singh, National Centre for Integrated Pest Management, India
Archana Bhardwaj, National Centre for Integrated Pest Management, India
S Vennila, National Centre for Integrated Pest Management, India
Someshwar Bhagat, National Centre for Integrated Pest Management, India
Neelam Mehta, National Centre for Integrated Pest Management, India
Kamlesh Kumar, National Centre for Integrated Pest Management, India
Volume II

Chapter 33
Real-Time Visual Simulation of Urban Sustainability .......................................................... 581
  John P. Isaacs, University of Abertay Dundee, UK
  David J. Blackwood, University of Abertay Dundee, UK
  Daniel Gilmour, University of Abertay Dundee, UK
  Ruth E. Falconer, University of Abertay Dundee, UK

Section 3
Utilization and Application

This section continues from the previous section to explore how new technologies can be integrated with real-world industries to enhance Sustainable Practices. As scientists discover new energy resources, develop more efficient engines and reactors, and discuss innovative methods of preventing climate change, leaders and professionals in a variety of industries must take advantage of these tools in their daily practices. Construction, agriculture, mining, and transportation are only some of the fields that can benefit immensely from advances in sustainable technologies. The 17 chapters in this section provide an in-depth examination of the utilization and application of the fundamental principles of Sustainable Practices.

Chapter 34
Urban Environmental Applications of GIScience: Challenges and New Trends ...................... 602
  Buket Ayşegül Ozbakir, Yildiz Technical University, Turkey

Chapter 35
Natural Resources Conservation in the Influence Areas of Cities: A Case Study on Bucharest, Romania .............................................................. 621
  Mihaí Răzvan Niță, University of Bucharest, Romania
  Mihăiță Iulian Niculae, University of Bucharest, Romania
  Diana Andreea Onose, University of Bucharest, Romania
  Maria Pătroescu, University of Bucharest, Romania
  Gabriel Ovidiu Vănău, University of Bucharest, Romania
  Cristiana Maria Ciocânea, University of Bucharest, Romania

Chapter 36
Energy-Aware Intelligence in Smart Spaces: A Case Study using Computer Vision and Machine Learning for User-Behavior Analysis .............................................................. 640
  Sangho Park, University of North Dakota, USA
  Henry Kautz, University of Rochester, USA

Chapter 37
Power Consumption Aware Cluster Resource Management .................................................. 658
  Simon Kiertscher, Potsdam Institute for Climate Impact Research, Germany
  Bettina Schnor, University of Potsdam, Germany
  Jörg Zinke, University of Potsdam, Germany
Chapter 38
Use of Policy Instruments to Promote Sustainable Energy Practices and Implications for the Environment: Experiences from Singapore

Leo Tan Wee Hin, Singapore National Academy of Science, Singapore & National University of Singapore, Singapore
R. Subramaniam, Singapore National Academy of Science, Singapore & Nanyang Technological University, Singapore

Chapter 39
Renewable Energy Scenario of Pakistan for Sustainable Development

Asif A. Shah, Mehran University Institute of Science & Technology Development, Pakistan
Arabella Bhutto, Mehran University Institute of Science & Technology Development, Pakistan
S. M. Qureshi, Mehran University Institute of Science & Technology Development, Pakistan
Ambreen Shah, University of Sindh, Pakistan
A. A. Shah, Mehran University of Engineering and Technology, Pakistan
Wajiha Shah, Mehran University of Engineering and Technology, Pakistan

Chapter 40
Finding the Sweet Spot of Sustainability in the Energy Sector: A Systems Approach to Managing the Canadian Oil Sands

Nancy Higginson, University of Calgary, Canada
Harrie Vredenburg, University of Calgary, Canada

Chapter 41
Using Sensor-Based Measurement Technology to Reduce the Environmental Impact of Perishable Goods

Alexander Ilic, ETH Zurich, Switzerland
Thorsten Staake, ETH Zurich, Switzerland
Elgar Fleisch, ETH Zurich, Switzerland & University of St. Gallen, Switzerland

Chapter 42
Sustainability and the UK’s Major Food Retailers: Consumer Concentric Cause Marketing

Writ Large

Peter Jones, University of Gloucestershire, UK
Daphne Comfort, University of Gloucestershire, UK
David Hillier, University of Glamorgan, UK

Chapter 43
Organic Production in Serbia: The Transition to Green Economy

Vladimir Filipović, Institute “Tamis” Pancevo, Serbia
Svetlana Roljević, Institute of Agricultural Economics, Belgrade, Serbia
Bojana Bekić, Institute of Agricultural Economics, Belgrade, Serbia
Chapter 44
Environmental Sustainability Initiatives in the Agrifood Supply Chain .............................................. 786
   Ioannis Manikas, University of Greenwich, UK
   Petros Ieromonachou, University of Greenwich, UK
   Dionysis Bochtis, Aarhus University, Denmark

Chapter 45
Hydrology and Integrated Water Resource Management for Sustainable Watershed Management in Kenya ................................................................. 798
   Christopher Misati Ondieki, Kenyatta University, Kenya

Chapter 46
Application of Quantitative Methods in Natural Resource Management in Africa: A Review........ 816
   Elias T. Ayuk, United Nations University Institute for Natural Resources in Africa, Ghana
   William M. Fonta, United Nations University Institute for Natural Resources in Africa, Ghana
   Euphrasie B. Kouame, United Nations University Institute for Natural Resources in Africa, Ghana

Chapter 47
Towards Sustainable Mining: Diffusion of Sustainability Concepts into the Mining Industry within Canada........................................................................... 846
   Michelle Edith Jarvie-Eggart, Barr Engineering, USA & University of Maryland University College, USA

Chapter 48
Sustainable Waste Management System and Reverse Logistic Network Design in Plastic Industry: A Case Study of Turkey ...................................................... 867
   Emel Kizilkaya Aydogan, Erciyes University, Turkey
   Nuray Ates, Erciyes University, Turkey
   Nigmet Uzal, Nigde University, Turkey
   Fulya Zaral, Erciyes University, Turkey
   Petraq Papajorgji, European University of Tirana, Albania

Chapter 49
Innovation for Sustainability in Aviation: World Challenges and Visions.............................................. 885
   Hiroko Nakamura, The University of Tokyo, Japan
   Yuuya Kajikawa, The University of Tokyo, Japan
   Shinji Suzuki, The University of Tokyo, Japan

Chapter 50
Consideration of Sustainability in Projects and Project Management: An Empirical Study .......... 903
   Gilbert Silvius, HU University of Applied Sciences Utrecht, The Netherlands & Van Aetsveld, The Netherlands
   Ron Schipper, Van Aetsveld Project Management and Change, The Netherlands
   Snezana Nedeski, Maastricht University, The Netherlands
Section 4
Organizational and Social Implications

This section discusses the human element of Sustainable Practices, encouraging citizens and leaders alike to take responsibility for solving the growing environmental crisis. As new technologies are implemented in organizational workflow, managers and leaders must train their constituents in the proper and efficient use of these new policies. In particular, issues of project management, citizen engagement, urban design, and environmental education are critical to the ultimate effectiveness of new technologies. In these 15 chapters, readers will find an in-depth discussion on some of the most pressing organizational and social implications of Sustainable Practices.

Chapter 51
Project Manager as a Pivot Point for Implementing Sustainability in an Enterprise ......................... 926
Richard Maltzman, EarthPM, LLC, USA
David Shirley, EarthPM, LLC, USA

Chapter 52
Sustainability in Supply Chain Management ........................................................................................ 944
Farzad Dehghanian, Ferdowsi University of Mashhad, Iran

Chapter 53
How Positive Psychology can Support Sustainable Project Management ............................................. 958
Jasper C. van den Brink, HU University of Applied Sciences Utrecht, The Netherlands

Chapter 54
Social Networking Technologies as a Strategic Tool for the Development of Sustainable Production and Consumption: Applications to Foster the Agility Needed to Adapt Business Models in Response to the Challenges Posed by Climate Change.............................................................. 974
Paul T. Kidd, Cheshire Henbury, UK

Chapter 55
Social Media-based Communities of Practice for Education in Citizenship and Sustainability ....... 988
Dimitra Florou, University of Athens, Greece
Dimitris Gouscos, University of Athens, Greece

Chapter 56
Community Opposition and Public Engagement with Wind Energy in the UK .............................. 1009
Matthew Cotton, University of Leeds, UK

Chapter 57
Energy Efficient Residential Block Design: The Case of Ankara ....................................................... 1027
Hakan Hisarligil, Erciyes University, Turkey
Sule Karaaslan, Gazi University, Turkey

Chapter 58
Diffusion of Renewable Energy Technologies in Rural Communities: Exploratory Study of Development Partnerships in Cajamarca, Peru........................................................................ 1047
Inna Platonova, University of Calgary, Canada
Chapter 59
The Effect of Farmer Capacities, Farm Business Resources and Perceived Support of Family, Friends and Associational Networks on Intentions to Invest in Renewable Energy Ventures in the UK ................................................................. 1072
Aurelian Mbzibain, University of Wolverhampton Business School, UK

Chapter 60
Government Policies to Promote Production and Consumption of Renewable Electricity in the US .................................................................................................................................................. 1089
Eun-Hee Kim, George Washington University, USA

Chapter 61
Product-Service Systems as Enabler for Sustainability-Oriented Innovation: The Case of Osram’s Off-Grid Lighting .................................................................................................................. 1106
Friedrich Grosse-Dunker, Dark Horse GmbH, Germany
Erik G. Hansen, Leupana University Lüneburg, Germany

Chapter 62
Digital Urbanism in Southern Italy ............................................................................................................. 1121
Arturo Di Bella, University of Catania, Italy

Chapter 63
Urban Environment Quality in the Italian Spatial Data Infrastructure ..................................................... 1137
L. Congedo, Istituto Superiore per la Protezione e la Ricerca Ambientale, Italy
F. Baiocco, Istituto Superiore per la Protezione e la Ricerca Ambientale, Italy
S. Brini, Istituto Superiore per la Protezione e la Ricerca Ambientale, Italy
L. Liberti, Istituto Superiore per la Protezione e la Ricerca Ambientale, Italy
M. Munafò, Istituto Superiore per la Protezione e la Ricerca Ambientale, Italy

Chapter 64
The Heifer International Model of Sustainable Adult Education ................................................................. 1150
Carrie J. Boden McGill, University of Arkansas at Little Rock, USA
Lauren Merritt, University of Arkansas at Little Rock, USA

Volume III

Chapter 65
Responsible Management Education in Practice: The Principles and Processes for Educating Socially Responsible and World Engaged Leaders.................................................................................. 1164
Marco Tavanti, DePaul University, USA
Section 5
Critical Issues

This section takes an in-depth look at some of the problems facing Sustainable Practices in the twenty-first century in order to present potential solutions to future concerns. With any new technology, problem, or discovery comes uncertainty as to its impact on future practices, livelihoods, and the overall sustainability of a society; this uncertainty must be analyzed and addressed if any useful advances are to be made. As the global landscape continues to shift, questions of environmental change, economic reform, social policy, and industrial development are of paramount concern. In this section, 14 chapters explore some of the critical issues driving advances in Sustainable Practices.

Chapter 66
  Mohamed Eid, The British University in Egypt, Egypt

Chapter 67
Conceptualization of the Base for Sustainable Rural Development Policy Implementation .......... 1203
  Njegovan Zoran, University of Novi Sad, Serbia
  Olgica Bošković, University of Belgrade, Serbia

Chapter 68
A Paradigm of Constructing Industrial Symbiosis and Coupling in China’s County-Region Economic Sustainable Development .......................................................... 1218
  Guangming Li, Shenzhen Tourism College of Jinan University, China

Chapter 69
Mind the Gap Please!: Contrasting Renewable Energy Investment Strategies between the World Bank and Poor Customers in Developing Countries ......................................................... 1232
  Sam Wong, University of Liverpool, UK

Chapter 70
Assessing the Barriers to Greener Fiscal Measures and Ecological Tax Reform in the Transport Sector .................................................................................................................. 1246
  David Browne, Trinity College, The University of Dublin, Ireland
  Brian Caulfield, Trinity College, The University of Dublin, Ireland
  Margaret O’Mahony, Trinity College, The University of Dublin, Ireland

Chapter 71
Improving the Sustainability of Road Freight Transport by Relaxing Truck Size and Weight Restrictions .......................................................................................................................... 1265
  Alan McKinnon, Heriot-Watt University, UK

Chapter 72
Sustainable Transport and Quality of Life Analysis of Cycling Impact in Italy ................................. 1279
  Donatella Privitera, University of Catania, Italy
Chapter 73
The Role of Urban Consolidation Centres in Sustainable Freight Transport ........................................ 1297
Julian Allen, University of Westminster, UK
Michael Browne, University of Westminster, UK
Jacques Leonardi, University of Westminster, UK
Allan Woodburn, University of Westminster, UK.

Chapter 74
Evaluating Sustainability on Projects Using Indicators .......................................................... 1313
Jude Talbot, AMEC, Canada
Ray Venkataraman, Penn State University, USA

Chapter 75
Energy Efficient Data Query, Processing and Routing Techniques for Green Wireless Sensor
Networks ........................................................................................................................................... 1331
Afshin Behzadan, Ryerson University, Canada
Alagan Anpalagan, Ryerson University, Canada

Chapter 76
Study of Hybrid Sustainable Energy System Based on PEM Fuel Cells and Photovoltaic-Module
Power Generator .......................................................................................................................... 1357
Fatima Zohra Zerhouni, University of Sciences and Technology Mohamed Boudiaf, Algeria
M'hammed Houari Zerhouni, University of Sciences and Technology Mohamed Boudiaf, Algeria
Mansour Zegrar, University of Sciences and Technology Mohamed Boudiaf, Algeria
Amine Boudghene Stambouli, University of Sciences and Technology Mohamed Boudiaf, Algeria

Chapter 77
Are Biofuels a Factor of Sustainable Development in a Food Insecurity Context in Africa?
Case Study of Burkina Faso ........................................................................................................ 1380
Marie-Hélène Dabat, Centre de Coopération Internationale en Recherche Agronomique
pour le Développement, Burkina Faso
Joël Blin, Centre de Coopération Internationale en Recherche Agronomique pour le
Développement, Burkina Faso & 2iE, Institut International d’Ingénierie de l’Eau
et de l’Environnement, Burkina Faso
Elodie Hanff, 2iE, Institut International d’Ingénierie de l’Eau et de l’Environnement, Burkina Faso

Chapter 78
Indicators of Land Degradation Vulnerability due to Anthropic Factors: Tools for an Efficient
Planning ......................................................................................................................................... 1400
V. Imbrenda, University of Basilicata, Italy & National Research Council of Italy, Institute
of Methodologies for Environmental Analysis, Italy
M. D’Emilio, Institute of Methodologies for Environmental Analysis, Italy
M. Lanfredi, Institute of Methodologies for Environmental Analysis, Italy
M. Ragosta, University of Basilicata, Italy
T. Simoniello, Institute of Methodologies for Environmental Analysis, Italy
Chapter 79
Desert in Bengal Delta—Changes in Landscape, Changes in Livelihood: Can Diffusion and Adoption of Sustainable Adaptation Make a Difference? .................................................. 1414
Md. Mustafa Saroar, Khulna University, Bangladesh
Jayant K. Routray, Asian Institute of Technology, Thailand

Section 6
Emerging Trends

This section examines both future difficulties and innovative solutions for climate change and Sustainable Practices. Though the economic, ecological, and social troubles in the world today seem almost insurmountable, human ingenuity promises to offer ever more unique solutions to the problems faced by modern societies. Some notable advances explored in this section include environmental education, waste management and renewable energy, conservation of natural resources, and ecologically-friendly urban environments. The final 17 chapters of this extensive three-volume reference conclude with a detailed look at emerging trends in the field of Sustainable Practices.

Chapter 80
The University of Hawai`i at Manoa Sustainability Courtyard as a Center for Campus Engagement .......................................................... 1443
John Cusick, University of Hawai`i at Manoa Environmental Center, USA

Chapter 81
Supporting Sustainability Education and Leadership: Strategies for Students, Faculty, and the Planet.................................................................................................................. 1454
Alice Cassidy, In View Education and Professional Development, Canada
Yona Sipos, University of British Columbia, Canada
Sarah Nyrose, Boucher Institute of Naturopathic Medicine, Canada

Chapter 82
Education Collaboration Development: A Blended Shore Education Approach to Sustainable Development.................................................. 1478
Gabriele Strohschen, DePaul University, USA

Chapter 83
Environmental Education through Envkids Didactical Framework and ICT Tools ................. 1492
Hariklia Tsalapata, UTH, Greece
Rene Alimsi, CERETETH, Greece
Olivier Heidmann, CERETETH, Greece

Chapter 84
Reverse Logistics for Sustainable Waste Management Processes ........................................ 1505
Fraser McLeod, University of Southampton, UK
Tom Cherrett, University of Southampton, UK
Chapter 85
Energy from Waste: Present Scenario, Challenges, and Future Prospects towards Sustainable Development
Kalpana Arora, Indian Institute of Technology, India
Ashwani Kumar, Indian Institute of Technology, India
Satyawati Sharma, Indian Institute of Technology, India

Chapter 86
Encouraging the Development of Renewable Energy: The Role of Cooperatives
Eric Viardot, EADA Business School, Spain

Chapter 87
Value Creation with Wood-Based Energy Business Models
Wim Westerman, University of Groningen, The Netherlands
Jeffrey Paays, University of Groningen, The Netherlands
Satu Pätäri, Lappeenranta University of Technology, Finland

Chapter 88
Impacts of High Wind Power Penetration on the Frequency Response Considering Wind Power Reserve
Bakhtiar Badmasti, Islamic Azad University—Marivan Branch, Iran
Hassan Bevrani, University of Kurdistan, Iran
Ali Hessamy Naghshbandy, University of Kurdistan, Iran

Chapter 89
International Development Partnerships and Diffusion of Renewable Energy Powered Lighting Technologies in Off-Grid Communities in Developing Countries: Exploratory Study in Talamanca, Costa Rica
Inna Platonova, University of Calgary, Canada

Chapter 90
Demand-Side Response Smart Grid Technique for Optimized Energy Use
Fouad Kamel, University of Southern Queensland, Australia
Marwan Marwan, Queensland University of Technology, Australia

Chapter 91
Management and Utilisation of Natural Resources in Special Nature Reserves: A Case Study
Božo Drašković, Institute of Economic Sciences, Serbia
Jovan Zubović, Economics Institute, Serbia
Ivana Domazet, Institute of Economic Sciences, Serbia

Chapter 92
Promoting Rainwater Harvesting (RWH) in Small Island Developing States (SIDS): A Case in the Grenadines
Everson J. Peters, University of the West Indies, Trinidad and Tobago
Chapter 93
The Sustainable Waterfront ................................................................. 1683
Matthew Bradbury, Unitec Institute of Technology, New Zealand

Chapter 94
Multifunctional Agriculture and the Green Economy ........................................ 1701
Andrei Jean-Vasile, Petroleum and Gas University of Ploiesti, Romania

Chapter 95
Sustainable Urbanism Revisited: A Holistic Framework Based on Tradition and Contemporary Orientations................................................................. 1723
Derya Oktay, Eastern Mediterranean University, North Cyprus

Chapter 96
Towards Zero Energy Buildings (ZEB): The Role of Environmental Technologies ...................... 1742
Paris A. Fokaides, RD Hydraulis Ltd, Cyprus

Index.................................................................................................................. xxviii