Contents

Part I Research and Education on Climate Change Mitigation

Integrating Farmer’s Traditional Knowledge and Practices into Climate Change Sectoral Development Planning: Case Studies from India .................................................. 3
Nidhi Madan

Roof Top Farming a Solution to Food Security and Climate Change Adaptation for Cities .................. 19
Gunjan Gupta and Pradeep Mehta

Modeling and Monitoring of Air Quality in Greater Cairo Region, Egypt Using Landsat-8 Images, HYSPLIT and GIS Based Analysis .................................................. 37
Moawad Badawy Moawad, Abdel Aziz Youssief and Khaled Madkour

Going Fossil Free: A Lesson in Climate Activism and Collective Responsibility .......................... 55
Eric S. Godoy

Philippine Higher Education Institutions’ Responses to Climate Change ........................................ 69
Jocelyn C. Cuaresma

Adapting Sri Lanka to Climate Change: Approaches to Water Modelling in the Upper Mahaweli Catchment Area .................... 95
M.P. Gunawardena and M.M.M. Najim

The Challenges and Opportunities for Higher Education Institutions at the Science–Policy Interface ............................................................. 117
Edward A. Morgan
Study of the Vulnerability of Basic Social Infrastructure of the Mexico’s North Border for Purposes of Resiliency and Adaptation to the Adverse Effects of Climate Change 131
Víctor Manuel Lopez-Lopez, Artemisa M. Reyes-Gallegos and Cynthia Lopez-Galvez

Climate Change Mitigation and Adaptation Studies in Nigeria Universities: Achievements, Challenges and Prospects 139
John-Felix K. Akinbami and Catherine Abiola O. Akinbami

Landslide Loss and Damage in Darbung Village, Gorkha District, Nepal 153
Bishnu Kumari Sapkota

Adaptations to Climate Change in Bangladesh: Development of a National Inventory 175
Debanjali Saha, Mohammed Abed Hossain, Md. Shahriar Shafayet Hossain, M. Shahjahan Mondal and Rezaur Rahman

Implementing Heat-Related Adaptation Measures in the Tri-City Area Bergisches Städtedreieck 191
Alice Neht, Kathrin Prenger-Berninghoff and Dirk Vallée

Legacy of Authoritative Environmentalism and Path-Dependent Historic Institutionalism in the Climate Change Policy Dynamics of the Maldives 211
Ibrahim Mohamed and David King

Part II Research and Education on Climate Change Adaptation

Community-Based Adaptation to Climate Change in Egypt—Status Quo and Future Policies 235
Paulina Froehlich and Mohammad Al-Saidi

Implications of the Paris Climate Change Agreement for Adaptation Research and Universities 251
Edward A. Morgan, Willow Hallgren, Fernanda Helfer, Oz Sahin, Johanna Nalau, Esther Onyango, Wade Hadwen and Brendan Mackey

Climate Change and Extreme Events over Dabaa Region, Egypt 263
Magdy Kamal Badir and Hamdy Abd AlRahman

Climate Change Adaptation in Yam and Cassava Production, Cross River State, Nigeria: The Role of Higher Educational Institutions 275
Hilda Chia Eta and Austine Oko Angba
Jean Homian Danumah, Samuel Nii Odai, Mahaman Bachir Saley, Lucette You Akpa, Joerg Szarzynski and Fernand Kofi Kouame

Climate Change Mitigation and Adaptation in Higher Education Institutions: The Case Study of the Faculty of Physical and Mathematical Sciences at the University of Chile .................. 307
Claudia Mac-Lean, Maisa Rojas, Luis Vargas and Natalia Vicencio

Towards Climate Change Capacity Development in Universities: Climate Change Training Needs of Agriculture Lecturers in Niger Delta Region of Nigeria .......................... 321
C.C. Ifeanyi-Obi, C.C. Wigwe, U.R. Etuk and O.M. Adesope

Greek Universities Addressing the Issue of Climate Change .......... 333
Constantina Skanavis, Aristeia Kounani and Ioannis Ntoutounakis

Using Improved Varieties of Pearl Millet in Rainfed Agriculture in Response to Climate Change: A Case Study in the Tillabéri Region in Niger ................................................... 345
Abdourahamane Tankari Dan-badjo, Halima Oumarou Diadie, Sabrina Maria Rita Bonetto, Carlo Semita, Elena Isotta Cristofori and Anna Facello

Preserving Cultural Heritage from the Impacts of Climate Change. The Case of Musical Instruments and Scores ....................... 359
Artemisa M. Reyes Gallegos and Víctor Manuel Lopez-Lopez

Development and Application of Corn Model for Climate Change Impact Assessment and Decision Support System: Enabling Philippine Farmers Adapt to Climate Variability .................... 373
Orlando F. Balderama, Lanie A. Alejo, Edgardo E. Tongson and Rhia T. Pantola

Applied and Planning-Oriented Urban Climatology at the University of Kaiserslautern ................................. 389
Sascha M. Henninger and Arne Leitte

Developing Indices for Adaptation and Adaptive Capacity in Indian Marine Fishing ..................................................... 401
Krishna Malakar, Trupti Mishra and Anand Patwardhan

Building Capacity for Climate Change Mitigation and Adaptation Through Mainstreaming Climate Change in Curricula of Tertiary Training Institutions in Africa .................................. 423
Jackson Eftrre, Vianny Natugonza, Laban Musinguzi, Mark Olokotum, Shamim Naigaga and Richard Ogutu-Ohwayo
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation of a Transdisciplinary Research Project Aimed at the Development of Climate Change Adaptation Measures</td>
<td>441</td>
</tr>
<tr>
<td>Andrea Heilmann and Hardy Pundt</td>
<td></td>
</tr>
<tr>
<td>The Role of Risk and Vulnerability Science Centres in Enhancing the Resilience of Local Government and Local Communities to Climate Change in South Africa</td>
<td>463</td>
</tr>
<tr>
<td>Julia Mambo and Miriam Murambadoro</td>
<td></td>
</tr>
<tr>
<td>Opportunities and Barriers for Research and Actions in Climate Change Adaptation in Tanzania</td>
<td>479</td>
</tr>
<tr>
<td>Nathalie Jean-Baptiste and Wilbard Kombe</td>
<td></td>
</tr>
<tr>
<td>Adoption of Product and Process Eco-innovation for Developing Low Carbon Economy: A Rough Set Theory Based Analysis</td>
<td>497</td>
</tr>
<tr>
<td>Chiranjit Das and Sanjay Jharkharia</td>
<td></td>
</tr>
<tr>
<td>Case Study of Uttarakhand in Perspective of Extreme Climatic Events: Fire, Ecosystem and Livelihoods</td>
<td>519</td>
</tr>
<tr>
<td>Harshit Pant</td>
<td></td>
</tr>
<tr>
<td>Financing Low-Emission and Climate-Resilient Infrastructure in the Arab Region: Potentials and Limitations of Public-Private Partnership Contracts</td>
<td>533</td>
</tr>
<tr>
<td>Damilola S. Olawuyi</td>
<td></td>
</tr>
<tr>
<td>Urban Stormwater Infrastructure Planning: The Contribution of a Set of Universities to the Sustainable Management of Stormwater in Baltic Cities</td>
<td>549</td>
</tr>
<tr>
<td>Walter Leal Filho, Ana Maria Jones, Anne Paavolainen, Tuomas Valtonen, Maret Merisaar, Piia Leskinen and Gunta Slihta</td>
<td></td>
</tr>
<tr>
<td>Escaping the Economist’s Straightjacket: Overcoming the Free-Rider Mentality Which Prevents Climate Change from Being Effectively Addressed</td>
<td>561</td>
</tr>
<tr>
<td>Gherardo Girardi and Gian Lorenzo Preite</td>
<td></td>
</tr>
</tbody>
</table>
Climate Change Research at Universities
Addressing the Mitigation and Adaptation Challenges
Leal Filho, W. (Ed.)
2017, X, 575 p. 116 illus., 77 illus. in color., Hardcover
ISBN: 978-3-319-58213-9