



# Umweltbildung, Umweltkommunikation und Nachhaltigkeit

Environmental Education,  
Communication and Sustainability

Herausgegeben von  
Edited by  
Walter Leal Filho



## Sustainability at Universities – Opportunities, Challenges and Trends

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2009. 340 pp.  
ISBN 978-3-631-59690-6 · hardback, clothbound € 49,80

Sustainability is widely defined as “the ability to meet the needs of the present while living within the carrying capacity of supporting ecosystems and without compromising the ability of future generations to meet their own needs”. However, the goal of managing today’s resources so that they may be available to future generations is not easy to reach. Indeed, in order to achieve this ambitious goal, it is important that universities – similar to other sectors of society – become engaged in the sustainability debate, not superficially as it has largely been the case until now, but in a manner not seen before. This book provides a concrete contribution towards the goal of fostering sustainability at universities, by especially focusing on opportunities, challenges and trends. It contains a wide range of papers written by university lecturers, professors, students and practitioners, as well as practical projects, which illustrate some of the latest trends and future perspectives related to sustainability in higher education. It was prepared as part of the project JELARE (Joint European-Latin American Universities Renewable Energy Project), funded by ALFA III, an EU programme of co-operation between the European Union and Latin America, in the framework of higher education and training. This book is meant to inform, inspire and engage all members of the University community in the wide debate on how the principles of sustainable development may be implemented into practice. Produced mid-way in the UN Decade of Education for Sustainable Development, led by UNESCO, it serves the purpose of documenting and disseminating current initiatives all round the world, also paving the way for new ones.

*Contents:* Anne Sibbel: Implications of Sustainability for Training Nutritionists for the 21<sup>st</sup> Century · Suppachart Tantisureeporn/Leisa J. Armstrong: Introducing a New Technology to Enhance Community Sustainability – An Investigation of the Possibilities of Sun Spots · Joyce Hendricks/Vicki Cope/Maureen Harris: Pragmatic Truths – When Ritual Meets the Reality of Community Engagement · Niranjali Jayasuriya: Teaching Sustainable Stormwater Management Using Project Based Learning · John Renner/Jim Cross: Community Engagement for Sustainability: An Invitation and a Challenge to all Universities · Joshua M. Pearce, Eleanor E. ter Horst: Service Learning for Sustainable Development in Foreign Languages · Will Turner: Developing and Sustaining Perpetual School University Partnerships · Sharifah Norhaidah Syed Idros/Abdul Rashid Mohamed: Greening the Teacher Education Program at Universiti Sains Malaysia – A Report on Baseline Studies · Pamela Robinson: Teaching Urban Sustainability – New Approaches for Emerging Needs · Alessandra Pavesi/Carmen Roselaine de Oliveira Farias/Haydée Torres de Oliveira: Greening Higher Education as a Procedure of Institutional Learning · Danielle P. Smyth/Arthur L. Fredeen/Annie L. Booth/David J. Connell: Waste Management and Sustainability at ‘Canada’s Green University’™ · Michael A. Reiter/Patrick C. Coggins/Mark E. Howse: Designing an Integrated Environmental Science Curriculum Using an IRMA Chart · Maria Novo, M. Angeles Murga: Environmental Education of Key People for Sustainable Development: a Case-Study · Rodrigo Lozano/Ken Peattie: Developing a Tool to Audit Curricula Contributions to Sustainable Development · Heather Burns: Skilled in Sustainability – Teaching Sustainability in Skills-Based Courses · Luis Velazquez/Nora Munguía/Andrea Zavala/Javier Esquer: Sustainability Leadership by Implementing the ISO 14001 Framework on a Latin-American Campus · Alfred Posch: International Cooperation in Higher Education by Means of a Joint Master’s Programme in Sustainable Development · Deborah Schneiderman/Kara Freihoefer: Integrating Sustainability into Design Curriculum · Diane Pruneau/Abdellatif Khattabi/Joanne Langis/Charline Vautour: Educating and Communicating about Climate Change – Challenges and Possibilities · Melf-Hinrich Ehlers/Vanesa Castàn Broto/Maya K. Gislason:

Interdisciplinary Research Approaches to Sustainability – the Young Scientists’ Perspective · Dianne Chambers: Assessing & Planning for Environmental Sustainability – A Framework for Institutions of Higher Education · Juliet Willetts/Naomi Carrard/Jade Herriman: Transdisciplinarity: Realising its Potential to Support Effective Postgraduate Sustainability Teaching and Learning · Walter Leal Filho: Sustainability at Universities – Opportunities, Challenges and Trends

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## **Technical Education for Sustainability**

An Analysis of Needs in the 21<sup>st</sup> Century

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2009.

244 pp., num. tables and graphs

ISBN 978-3-631-58594-8 · hardback € 44,80

How does technical education fit into today’s society? What is the implication of the United Nations Decade of Education for Sustainable Development (2005-2014) for technical education? This book examines these questions. The author analyses the corresponding needs within technical education from various perspectives. She has identified different domains within the world of engineering including the domain of engineering profession and practice for manufacturing, design and development of technical solutions to fulfil the consumers’ needs, the domain of technology assessment which considers potential impacts of technical solutions on human beings, and the domain of technical education as the foundation for engineering knowledge and skills. This book will be helpful to both researchers and practitioners in shaping the future of technical education.

*Contents:* Identification of needs of technical universities and long-term strategies · Lessons learned from history and a survey of engineers’ opinions on success factors · Engineering practice in a democratic society with commitment to the precautionary principle for sustainable development

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## **Interdisciplinary Aspects of Climate Change**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2009.

507 pp., num. fig., tables and graphs

ISBN 978-3-631-58153-7 · hardback, clothbound € 68,-

Climate change is a matter of great interest and worldwide concern. The latest evidences from scientific studies and official documents produced by the International Panel on Climate Change (IPCC) show that the challenges posed by climate change need to be taken seriously if they are ever to be tackled properly. It is widely acknowledged that information, communication and education on climate change are important tools in the search for solutions to the social, economic or political problems climate changes poses. But despite the fact that much has been written about climate change, most works to date tend to focus on specific issues (e.g. climate modeling, forecasts) as opposed to addressing the problem in an interdisciplinary way as it should be. This book tries to address this perceived gap by providing a wide range of perspectives on climate change, which goes over and above the traditional barriers seen among subjects. It is interdisciplinary in nature and comprehensive in scope. This book was prepared in the context of „Climate 2008“ ([www.klima2008.net](http://www.klima2008.net)), the world’s first scientific conference on climate change held on the internet, and is one of the first outputs of the newly-created „International Climate Change Information Programme“ (ICCIIP). It provides a long-needed contribution to a better understanding of the interdisciplinary nature of the

subject matter of climate change and offers an overview of some of the on-going interdisciplinary projects and initiatives in this field taking place in

*Contents:* Solveig Mimler/Ulrike Müller/Stefanie Greis/Benno Rothstein: Impacts of Climate Change on Electricity Generation and Consumption · Roy Manoj/Ellis Geraint: The Role of Cross-Disciplinary Models in Reducing the Intensity of Environmental Release – An Example of the Irish Housing Sector · Frank Helten/Undine Giseke/Silvia Martin Han: Adapting the Modern City to New Challenges – Urban Agriculture as a Way out? · Walter Leal Filho/Franziska Mannke: Policy-making in Climate Change – Experiences from the ASTRA Project · Michael Dutschke: The Climate Stabilization Fund – Global Auctioning of Emission Allowances to help Forests and People · J. David Tàbara/Francesco Cots/Xingang Dai/Maria Falaleeva/Zsuzsanna Flachner/Darryn McEvoy/Saskia Werners: Social Learning on Climate Change among Regional Agents – Insights from China, Eastern Europe and Iberia · Dalia Streimikiene/Remigijus Ciegis: Climate Change Mitigation Policies: Costs and Effectiveness · Evangelos I. Manolas: Campaign Strategies by Environmental NGOs in the Negotiations on Climate Change · A.C. Warnock/C.G. Warnock: The Role of Sustainable Buildings in Climate Change Mitigation · Bálint Czúcz/Gergely Torda/Zsolt Molnár/Ferenc Horváth/Zoltán Botta-Dukát/György Kröel-Dulay: A Spatially Explicit, Indicator-based Methodology for Quantifying the Vulnerability and Adaptability of Natural Ecosystems · Frank Vanclay/Peat Leith/Aysha Fleming: Understanding Farming Community Concerns about Adapting to a Changed Climate · Melissa Nursey-Bray/Tony Ferrier: Risk Assessment and Local Government, Tasmania: Applying an Interdisciplinary Approach to Climate Change Adaptation · Lionel Boxer: Positioning Oneself and Others to Resolve Climate Change · Michael Belau/Jane Korck/Hans Weber: Climate Change and the Impacts on Flood Events at the Fränkische Saale – An Interdisciplinary Case-Study · Harri Moora/Viktoria Voronova/Alvina Reihan: The Impact of Municipal Solid Waste Management on Greenhouse Gas Emissions in Estonia · Karina Yager/Daniela Ulloa/Stephan Halloy: Conducting an Interdisciplinary Workshop on Climate Change: Facilitating Awareness and Adaptation in Sajama National Park, Bolivia · Sandra T. Marquart-Pyatt: Differences of Degree? – Public Opinion on Climate Change in a Cross-National Context · Anjali Helferty/Amelia Clarke/Rosa Kouri: The Campus Climate Challenge - Innovative Multi-Stakeholder Approaches to Reducing Greenhouse Gas Emissions at Canadian Colleges and Universities · Susan R. Kephart/Catherine A. Collins: Fostering Interdisciplinary Inquiry, Communication, and Action Among Diverse Populations · Nitin Chaudhary: An Assessment of India's Efforts on Education, Awareness and Capacity Building on Climate Change · Estelle Gaillard/Jo-Anne Ferreira: Engaging Australians on Climate Change - The Role of Education and Communication in Social Change · Sam Wong: Linking Climate Change and Sustainable Energy Technologies to Develop a "People-Centred" Intervention Framework · B. Rothstein/A. Scholten/E. Nilson/R. Baumhauer: Sensitivity of Bulk-Cargo Dependent Industries to Climate Change – First Results of a Case Study from the River Rhine

**28** · Walter Leal Filho / Nils Brandt / Dörte Krahn / Ronald Wennersten (eds.)

## **Conflict Resolution in Coastal Zone Management**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2008. 246 pp., num. fig.  
ISBN 978-3-631-57375-4 · hardback, clothbound € 39,90

In view of the importance of coastal areas to Baltic countries, integrated coastal zone management (ICZM) is a matter of prime concern. ICZM is also an important feature of the project Coastal Zone Management in the Baltic Sea Region (COASTMAN), undertaken in the context of the Interreg III B

(Baltic Sea) Programme. These experiences are presented in this book, which begins with an overview of the issue of conflict resolution in coastal zone management followed by a description of a set of administrative and legal processes and of case studies in the following regions: Hamburg (Germany), Haapsalu (Estonia), Klaipėda (Lithuania), Primorsk (Russia), Stockholm (Sweden) and Ventspils (Latvia). The third part presents information relating to the educational and training aspects of conflict resolution in ICZM. Thanks to its scope and trans-national dimension, this Handbook will be instrumental for organisations responsible for ICZM and will provide some inspiration towards initiatives that can be undertaken at the local level in order to better understand, and hopefully address, conflicts arising in coastal areas.

*Contents:* Ronald Wennersten: Administrative and Legal Processes in Coastal Zone Management · Ronald Wennersten: Methods in Environmental Conflict Resolution (ECR) · Case Studies: Loudden (Stockholm, Sweden), Hamburg (Germany), Haapsalu (Estonia), Klaipėda (Lithuania), Primorsk (Russia), Ventspils (Latvia): Ronald Wennersten/Nils Brandt/Åsa Larsson: Loudden: A Controversial Harbour for Petroleum Products in Stockholm · Walter Leal/Agnieszka Holda/Janne Juurikas/Irene Lucius/Dörte Krahn/Ahmed Quereshi: The River Elbe in Hamburg: A description of the issues surrounding the dredging of the River Elbe and possible means of conflict resolution · Arvo Iital/Krista Vilta/Enn Loigu/Jüri Kurba: Spatial Conflict Resolution and Coastal Zone Management for Haapsalu Bay · Olga Belous/Saulius Gulbinskas: Klaipėda Deep-Sea Seaport Development · Elena V. Victorova/M.S. Shilin/N.L. Plink/A.G. Kosheleva/G.G. Gogoberidze: Ecological and Sociological Studies as a Crucial Tool for Decision-Making in Primorsk Coastal Zone Management · Ilga Zilniece, Tatjana Valdmāne/Ineta Kraule/Sofija Galindoma/Laila Kule: Coastal Zone Management in Ventspils · Nils Brandt/Jan Fidler/Ronald Wennersten/Åsa Larsson: Pilot Course on 'Conflict Resolution applied to Coastal Zone Conflicts in the Baltic Sea Region' – The Educational Part of the Coastman Project · Walter Leal/Nils Brandt/Dörte Krahn/Ronald Wennersten: Conclusions

**27** · Ulisses Miranda Azeiteiro / Fernando Gonçalves / Ruth Pereira / Mário Jorge Pereira / Walter Leal Filho / Fernando Morgado (eds.)

## **Science and Environmental Education**

Towards the Integration of Science Education, Experimental Science Activities and Environmental Education

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2008.

406 pp., num. fig., tables and graphs

ISBN 978-3-631-55406-7 · hardback, clothbound € 56,20

This book tries to bridge the gap between science and environmental education by describing a set of projects, initiatives and field activities, which aim at raising awareness on the environment and encourage action. Via the descriptions of approaches, methods and projects, it shows how different organisations have been linking science with environmental education, the approaches used and the outcomes achieved. The various case studies guarantee that a special emphasis is given to practice – as opposed to a focus on the theory as has largely been the case in the past. This publication presents inputs from experienced science and environmental educators, drawing heavily from examples from Portugal. It will be a valuable tool for teachers, academics and practitioners as well as to students, who will find useful hints and advice on how to link science and environmental education, bearing in mind different contexts, realities and resources.

*Contents:* Marina Prieto Afonso Lencastre: Environmental Ethics and Moral Behaviour · Luís Marques/Amparo Vilches/Daniel Gil-Pérez/João Praia/David Thompson: The Current Planetary Crisis – A Missing Dimension in Science Education · Graça Martinho/Ana Paula Martinho/Maria Paula Nunes/Graça Gonçalves: Retrospective of Twelve Years (1990–2002) of Environmental Education in Portuguese Schools · Paula Bacelar-Nicolau/Leonor Bacelar Nicolau/Jorge M.M. Galamba/Ulisses M. Azeiteiro: Environmental Literacy in Biodiversity Terms, at the End of the Compulsory School – Case Study in Amadora, Portugal · Marina Prieto Afonso Lencastre/Cristina Leite: Popular Science and Environmental Education – A Case Study in Ecological Ethnography · Ana Cláudia Oliveira/António Luís: Knowledge of Portuguese Wild Fauna among Pupils attending Basic Education · Márcia Andrade/Marina Lencastre/Rui Leal: Visual Anthropology in the Project TERRA: Photographing the Place – Environmental Conceptions of 3<sup>rd</sup> Cycle Pupils in Portugal · Marina Prieto Afonso Lencastre/Rui Marcelino Leal: Educational Narrativity and Environmental Literacies – The TERRA Project · Catarina Ribeiro Marques/Joana Luísa Pereira/Nelson Abrantes/Fernando Gonçalves: Use of Bioindicators in Water Quality Assessment – Applicability to Several Education Levels · Sara C. Antunes/Anna M.M. Gonçalves/Ana S. Almeida/Fernando Gonçalves/Ruth Pereira: Edaphic Fauna as a Tool to Perceive Biodiversity – A Stepwise Learning Experience · Sérgio M. Marques/Fernando Gonçalves/Ruth Pereira: Experimental Amphibian Response to Climate Change Might Reveal why Dinosaurs Become Extinct · Ana M.M. Gonçalves/Sara C. Antunes/Ruth Pereira/Fernando Gonçalves: The Input of Nutrients in Freshwater Ecosystems – A Simulation of the Eutrophication Process · Ana M.M. Gonçalves/Bruno B. Castro/Fernando Gonçalves: Toxicity Effects of Sodium Chloride – A Tool to Perceive Environmental Change in Freshwater Ecosystems · Patrícia Ana Costa/Joana Luísa Pereira/Fernando Gonçalves: Ecology and Conservation in Primary School – A Case-Study with *Tyto Alba* Dietary Regime · Sónia Costa/Filipe Martinho/Carlos Palmeira/Miguel Ângelo Pardal: Overfishing, Aquaculture and the Problem of Food Quality · A Case Study for Portuguese Students · Arminda Pedrosa/Maria José S.M. Moreno: Sustainable Development, Problem Solving and Citizenship Nowadays - Reflections Based on a Study with University Students · Sandra Sofia Caeiro/Ana Paula Martinho/Maria Paula Nunes/Patricia Ventura: Household Sustainable Consumption – An Evaluation of Environmental Awareness Materials · José S.M. Moreno/Arminda Pedrosa: Ecologic Sustainability and Individual and Collective Everyday Practices – Views of the EQOFAR · Ana Isabel Baptista/Fernando Manuel Raposo Morgado: A Citizens View about Media Contribution to Environmental Education · Sílvia Maria Francisco/Fernando Manuel Raposo Morgado: School Community Insight about Media Contribution to the Environmental Education Improvement · Paulo Dias/António Nogueira/Fernando Morgado: Analysis of Environmental and Socioeconomic Asymmetries among Interior and Litoral Areas in a Sustainable Development Perspective.

**26** · Leal Filho, Walter / Mannke, Franziska / Schmidt-Thomé, Philipp (eds.)

## **Information, Communication and Education on Climate Change – European Perspectives**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2007.

215 pp., num. fig., tables and graphs

ISBN 978-3-631-56682-4 · hardback, clothbound € 39,10

It is now beyond any doubt that climate change represents a major threat to the environmental, social and economic well-being of the planet. The United Nations Framework Convention on Climate Change and its Kyoto Protocol are examples of what is being done. A further means to work towards

a reduction in greenhouse emissions is by raising awareness on the causes and consequences of climate change. The authors attempt to contribute to the global debate by outlining some educational methods, approaches and projects which have been focusing on climate issues in Europe. The examples illustrate that education, communication and training can play a key role in supporting efforts toward addressing climate change. This book is prepared as part of the INTERREG IIB (Baltic Sea) Project „ASTRA“ (Developing Policies and Adaptations Strategies to Climate Change in the Baltic Sea Region), a project involving Estonia, Finland, Germany, Latvia, Lithuania and Poland, and is also a further means of support to the UN Decade of Education for Sustainable Development, linking awareness, education and communication on climate change, one of the major challenges of modern times.

*Contents:* Jill Cook/Doogie Black/Angela Bentham/Tania Stadsbader/Jorn Peters/Lesley van Dijk/Mark Goldthorpe/Tim Yair/Fran Wallington/Meinte de Hoogh/Michael Belau: ESPACE - A New Transnational Approach to Adapting to the Impacts of Climate Change · Philipp Schmidt-Thomé/ Johannes Klein: Communicating Climate Change Impacts – an Approach Derived from two Regional Development Projects · Hans von Storch/Anders Omstedt/Hans-Jörg Isemer: Baltex Assessment of Climate Change for the Baltic Sea Basin (BACC) · Philip Gray/Shane Conway: Promoting Climate Friendly Communities in Northamptonshire, United Kingdom · Remigijus Ciegis/Dalia Streimikiene/Dalia Gineitiene: Climate Change Mitigation and Sustainability: Educational Issues · Simo Haanpää/Lasse Peltonen: Case Study Research as Bridge Builder between Science and the Society - The Rationale behind the ASTRA 2005 Winter Storm Study · Eugenia Aloj/Mariagrazia De Castro/Anna Zollo: Educational Actions in Italy to face the Problem of Climate Change · Evangelos I. Manolas: Teaching Global Climate Change as a Controversial Issue – Active Learning in Higher Education · Gerald Schernewski/Steffen Bock/Holger Janßen/Nardine Löser/Annemone Hmielorz: Regional Climate Change and Coasts – A Case Study on Perception, Information, Dissemination and Education · Birte Frommer/Lena Herlitzius: KLARA-Net: An Interdisciplinary Action Oriented Approach on Climate Change Adaptation · F.M. Chambers/J.R.G. Daniell/Sally A. Brain: Climate Change, Featuring the ACCROTELM Project: Dissemination of a European RTD Project by Film and DVD · Arunas Bukantis/Linas Kliucininkas/Egidijus Rimkus/Elena Talockaite: Raising Awareness of Climate Change: Experience in Lithuania · Walter Leal Filho/Franziska Manke: Linking Sustainability, Education, Communication and Climate Change – Some International Approaches and Good Practice.

**25** · Walter Leal Filho / Mario Salomone (eds.)

## **Innovative Approaches to Education for Sustainable Development**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2006. 282 pp., 16 fig.  
ISBN 978-3-631-55311-4 · hardback, clothbound € 51,40

The present book is a compilation of some of the key note speeches and papers delivered at the Third World Environmental Education Congress – 3<sup>rd</sup> WEEC (Turin, Italy, 3-6 October 2005). It includes a number of the contributions in various subjects discussed at the Congress, whose lead theme was *Educational paths towards Sustainability*. This book documents the wide range of topics in the field of environmental education discussed at the event, with a special emphasis to the scientific, educational and participatory aspects presented at the Congress and considers how they are linked with sustainable development. The Third World Environmental Education Congress was a further, positive step forward towards the cause of promoting environmental education across the world.

The experiences gathered and documented in this book, which is a concrete contribution towards the UN Decade of Education for Sustainable Development, want to raise further interest and catalyse further projects and initiatives all over the world.

*Contents:* Walter Leal Filho/Mario Salomone: Innovative approaches to education for sustainable development · Mario Salomone: „Governance“ and sustainable society the role of education in politics and the economy · Klaus Hübner: Learning to shape life · Antonella Bachiocchi/Cristina Bondavalli/Alessandra Pugliesi/Silvia Selmi: Scuola 10 e lode, an environmental-certification project for schools in the Emilia Romagna Region (Italy) · Elisabetta Falchetti/Nicola Margnelli: Park, yes or no? A teaching experience on a socio-environmental conflict. Introduction and theoretical guide-lines · David B. Zandvliet/David R. Brown: Islands of discourse: case studies of an ecological framework for environmental education · Vienola Vuokko: Promoting environmental education at kindergarten level in Savonlinna, Finland and in Saku, Estonia · Chrysanthi Kadji-Beltran/Constantinos P. Constantinou/Petra Lindemann-Matthies/Zacharias Zacharia: Diversity in environmental education: the pre-service training of the primary school teachers · Monica Camuffo/Paola Minoia/Gabriele Zanetto/Gonzalo Malvarez: Educom@med: education in coastal management for the Mediterranean · Marco Rieckmann: Education for Sustainable Development in Preschool Institutions. Development and testing of a training concept for Schleswig-Holstein (Germany) · Elena Camino/Giuseppe Barbiero/Marta Angelotti/Laura Colucci-Gray: An innovative experience of training in sustainability, addressed to PhD students involved in environmental research · Arundhati Vishwasrao/Alaka Gadgil: Revitalizing the philosophy of the Gurukul System for effective Environmental Education · Shailesh Shukla/James S. Gardner: Community-based approaches to environmental education: lessons for socially critical education and biodiversity conservation · Heidi Mardon/Pamela Williams: Sustainable relationships. The key to the success of the New Zealand EnviroSchools Programme · Eric Deche: Education for Sustainable Development learning for Sustainable Living in Kenya. A project of nature Kenya (East African Natural History Society) · Mary Murphy: From Ijoni to eco warrior: the impact of South Africa's reconciliation on environmental education · Heila Lotz-Sisitka: Engaging ambivalence: Environment in South Africa's new national curriculum statement · Giorgio Matricardi/Nello Agosta/Agostino Barletta/Barbara Comparini/Edoardo Canavese/Rita Porro: Urban green as a place of active citizenship practice: experiences in Genoa (Italy) · Kriszta Vásárhelyi/Gabriella Ádám: NGO contribution to realisation of governmental tasks in Environmental Education in Hungary · Sari Kemppainen: The YTV Waste Prevention Strategy 2007 · Jordi Segalàs/Didac Ferrer-Balas/Karel Mulder: Curriculum greening in engineering education. Experiences from Dutch and Spanish technological universities · João Luiz de Moraes Hoeffel/Almerinda Antonia Barbosa Ladini/Micheli Kowalczyk Machado/Jussara Christina Reis/Karina Andréa de Carvalho: Ideas of nature, tourism and environmental education. A study in the Cantareira system environmental protection area · Pio Russo Krauss/Guido Liotti/Aldo Aimone: Educational campaign about the plan against the acoustic pollution in Napoli (Italy) · Richard Kool/Elin Kelsey: Dealing with despair: the psychological implications of environmental issues · Shih-Tsen Liu/Matthew S. Kaplan/Huei-Hsu Wu: Effectiveness of an intergenerational approach for enhancing knowledge and improving attitudes toward the environment: study in the US and Taiwan · Aitor Albizu Intxausti/José Manuel Gutierrez Bastida: Self-regulation of attitudes in education for sustainable development · Theodore Alexiou/Yiannis Gailas: Curricula and Interdisciplinary Educational Environmental Programs: The Case of Constructing Awareness at a Remote Island Community · Igor Hadjamberdiew/Muzofar Isobaev: A Pilot Contemporary Courses in Central Asia · Pavlos Chrambanis/Ioulia Balaska: Environmental sensitisation of pupils within the innovative approach of Genathlon Center · Biodun Ogunyemi/Kolawole Raheem: Rural poverty, illiteracy and the quest for forest resource conservation in

Nigeria · Anna Birney: «Pathways» to change. Report of the supporting schools programme 2004/05 · Rohan H. Wickramasinghe: Traditional Knowledge and Environmental Education and practice in Sri Lanka · Katarzyna Potyrala/Alicja Walosik: Creating students' attitudes during the realization of ecological project

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## **Innovation, Education and Communication for Sustainable Development**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2006.

759 pp., num. fig. and graphs

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Education for Sustainable Development presents a vision of education that seeks to empower people to assume responsibility for creating a sustainable future. There are many different stakeholders in sustainable development whose participation is essential if long-term developments are to be achieved: governments and intergovernmental bodies, the mass media, the civil society and non-governmental organizations, the private sector and formal education institutions (i.e. schools, universities, research and training institutes). But despite the need for concerted efforts, truly cross-sectoral and interdisciplinary projects and practical activities are seldom seen. In addition, there are few publications where the subject matters of education, innovation and communication – as they apply to sustainable development – are approached in an integrated way. This book combines approaches, methods and analyses which illustrate the contribution of innovation, education and communication to the cause of sustainable development. It is prepared as part of the INTERREG IIIB (North Sea) Project „SmartLIFE“, a partnership between three EU regions – Germany, Sweden and the UK. It is also a further means of support to the UN Decade of Education for Sustainable Development, since there is a paucity of academic and at the same time practice-related books which go over and above the theory of education and of sustainable development and move on to address the various problems related to it.

*Contents:* Michael Atchia: Environment, Education and Peace · Eugenia Aloj/Mariagrazia De Castro/Anna Zollo: The Role of the Scientific Community for the Actuation of the Sustainable Development Strategies in the Connection among the Different Stakeholders · Gunter Pauli: Autopoietic Learning – The Age-Old Learning through Fables combined with Modern Day Systems Design · Anna Birney/Benedict Hren/Liz Jackson/Patricia Kendell: Creating Pathways to Change · Almut Beringer: Sustainability in Higher Education and Conservation Psychology: Theoretical Perspectives and Research Needs – A Contribution to the UN Decade of Education for Sustainable Development · Julie D. Johnston: Educating for Sustainable Development by Teaching about Sustainable Development – A Community Learning Together · Sandra Wooltorton: A Participatory Approach to Learning Sustainability · Sarah Holdsworth/Sarah Bekessy/Carolyn Hayles/Pelive Mnguni/Ian Thomas: Beyond Leather Patches: Sustainability Education at RMIT University, Australia · Joost Platje: Challenges in Introducing Sustainable Development Education at Universities – Examples of Poland · Carmen Bucova: Towards an Education for Sustainable Development National Strategy in Romania · Svetlana Chernikova: Innovative Approaches in Education for Sustainable Development at Saint-Petersburg State University · Elise S. Houghton/Lawrence A. White: Environmental and Sustainability Education in Ontario – A Disorienting Dilemma · James Pitt: Learning about Sustainability through

Design & Technology Education: the Sustainable Design Award · David B. Zandvliet/Janet Moore/ Meg Holden/Rob VanWynesburghe: Education for Sustainable Development – The Great Northern Way · M.Y. Kononova/O.G. Nikonova/P.P. Pirozhok: Sustainable Development for the Real-Estate Management of Resort, Sport and Tourism Objects · Anke Zenker-Hoffmann/Markus Will/Maja Posselt/Bernd Delakowitz: The International Education Network «Neisse University» – A Contribution to a Sustainable Higher Education in the Enlarged European Union · María Novo: Research and Innovation on Sustainable Development from the Environmental Education Field · James Derounian: Do as I do, not as I say! Preaching what we Practice · Jolie Mayer-Smith/Linda Peterat/Oksana Bartosh: Growing Together to Understand Sustainability – An Intergenerational Farming Project · David Carpenter/Robert Dyball: «Outside In» – Experiential Education for Sustainability · Michael Littleddyke: Science and Environmental Education for Initial Teacher Education · Alexander Fehér: Implementation of Education for Sustainable Development in an Agricultural University · Endla Reintam/Merit Noormets/Kaire Rannik/Raimo Kölli: Some Innovative Approaches for Teaching Soil Science at University Level · Laima Galkute: School Agenda 21 – From Policy to Practice · Kendal Hodgman: A Whole of Government Sustainability Approach · Remigijus Ciegis/Dalia Gineitiene: The University in the Promotion of Sustainability · Julian Swindell: The Information Villages of Pondicherry – A Case Study in Capacity Building for Sustainable Development · Alister Scott: Communicating Sustainability Research – Theoretical and Practical Challenges · Jette Egelund Holgaard: Environmental Communication in a Learning Perspective – Experiences from the Danish Electronic Industry · Chris Russell/Joshua M. Pearce: Sustainability Communication in American Model Research Universities – A Pragmatist Heuristic and the Rationale for Energy Service Projects · Rebecca Schiff: Engaging Cross-Sectoral Communication for the Development of Sustainable Food Systems · Christy Newman/Peter Newman/Robert Whitehead: Campaign for Sydney – Media Intervention for a Sustainability Agenda · C. Skanavis/Ch. Giannoulis: Sustainability Communication in the Interpretation of Natural Heritage · Barrett C. Brown/Chris Riedy: Use of the Integral Framework to Design Developmentally-Appropriate Sustainability Communications · Kathryn Buselich/Nicole Hodgson: Communicating Sustainability in a Civil Society Context – The WA Collaboration Experience in Western Australia · Gabriela Espinosa/Walter Leal Filho/Franziska Mannke: Using Principles of Environmental Education towards Increasing Knowledge amongst Consumers of Options to reduce Reliance on Fossil Fuels – An Analysis of Trends in the European Union

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## **Sustainable Development in the Baltic and Beyond**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2006.

611 pp., num. fig., tables and graphs

ISBN 978-3-631-55282-7 · hardback, clothbound € 93,30

This book documents and promotes the experiences from the *2<sup>nd</sup> Conference on Integrative Approaches Towards Sustainability (SHARING)*, held in Jurmala, Latvia, on May 11<sup>th</sup> to 24<sup>th</sup>, 2005. Attended by over 200 delegates from across the Baltic Sea region and beyond, the event provided an important contribution towards strengthening the integration of the region's RTD community and the sharing of knowledge and expertise in the Baltic, across Europe (including the Mediterranean and Black Sea regions) and elsewhere. The first part of this book contains some introductory remarks on sustainable development as a whole and on integrative approaches in particular. Furthermore, issues related to cleaner production and the moves towards zero emissions are outlined. Part two

of the book focuses on developments in the Baltic Sea Region, with a special emphasis on policy, implementation technologies and technologies for sustainable development. In the next part of the book, readers will find a special section on science for sustainable development. One special feature of this section is that papers are predominantly written by young researchers, some of whom will find in this volume, for the first time, the chance to publish results from their works. The final section of the book deals with social corporate responsibility and the environment, focusing on sustainable community development, corporate responsibility at an international level and concepts for education for sustainable development. This publication provides a very good overview of sustainability issues in the Baltic and beyond, illustrating the number of excellent works being performed by municipalities, universities, research agencies and NGOs, also showing the various ways via which sustainability can be delivered.

*Contents:* Uno Svedin: Sustainable Development – R&D Perspectives from Sweden and the European Union · Pierre Valette: Welcome Statement – Integrative Approaches towards Sustainability (SHARING) · Joachim H. Spangenberg: The Economic Sustainability of the Economy – Assessing the Sustainability of a Complex System by Applying Orientor Theory · Morihiro Kurushima: Challenges on New Technologies for Sustainable Energy System – Climate Change Policy Measures in Japan · Mickael Planasch/Gernot Gwehenberger/Hans Schnitzer/Christoph Brunner: From Cleaner Production to Zero Emissions · Per G. Berg: Factor 5 Flow City – Future Images of Sustainable Urban Development in the Baltic Sea Region · Sergio Ulgiati/Catia Cialani: Environmental and Thermodynamic Indicators in Support of Fair and Sustainable Policy Making – Investigating Equitable Trade among Latvia, Denmark and Italy · Walter Leal Filho: Coastman – Integrative Approaches to Coastal Zone Management in the Baltic Sea · C. Lagerberg-Fogelberg/F. Fogelberg/G. Grankvist: The Use of Environmental Information in Decision Making Promoting a Sustainable Food Chain · Janis Gravitis: Green Biobased Chemistry Platform for Sustainability · G. Geletukha/T. Zhelyezna/Y. Matveev/N. Zhovmir: Bioenergy Development in Ukraine – State of the Art and Perspectives · Lars Rydén: Urban Sustainability Strategies – Is there a Common Structure? · Arnolds Ubelis: Teaching for Sustainable Development and University-Municipality Partnerships (Project „Inversed Brain Drain“) · Bjarne Rasmussen: The Local Agenda 21 Change Agent – Why, What, Who, How? · Bernd Delakowitz: Environmental Management (EM) and Sustainable Development (SD) in University’s Strategic Management - Motivation and Experience from the Hochschule Zittau/Goerlitz - University of Applied Sciences (F.R.G.) · Krzysztof Nawratek: City as a Vehicle of Education · Luigi Bistagnino/Pier Paolo Peruccio/Carlotta Montanera: A Challenge for the Design - The Systems Design Thinking · Vladimir Stevanovic/Ivica Radovic/Slobodan Regner/Sreten Mandic/Zlatko Bulic/Aleksandar Joksimovic/Dejan Radovic: Adriatic Sea and Coastal Zone of Serbia and Montenegro - Characteristics of Biodiversity and Possibilities for their Sustainable Exploitation · Hans-Peter Winkelmann: Towards an International e-Learning Didactic for Sustainable Development - The European Virtual Seminar on Sustainable Development (EVS) · Andrea Segrè/Luca Falasconi/Marina Mantini/Sabina Morganti/Elisabetta Nanni/Hajnalka Petrics/Matteo Vittuari: The UniAdrion Experience - A Virtual University for the Adriatic-Ionian Basin · Stina Soewarta: The Contribution of Energy Policy to Sustainability · Hajnalka Petrics: Sustainable Development Concepts and Tools - The World Bank’s Approach to Sustainable Development: Environmental Sustainability and Poverty Reduction · Raimonds Ernsteins: Local Agenda 21 Process Facilitation - Environmental Communication and Self-Experience Development in Latvia · Dina Berzina: Climate Change Mitigation Initiatives - Energy Policy in Compliance with UNFCCC and Kyoto Targets · Markus Will: Foresight and Integrated Management Systems in Small and Medium sized Enterprises (SME) - Preliminary Considerations for a Toolkit towards Corporate

Sustainability · H. Schnitzer/G. Gwehenberger/Ch. Zwatz: Zero Emissions Research in Austria - A Case Study · Heather Worosz/Paulo Bento Maffei de Souza/Yury Kazhura: Sustainable Community Development in the Baltic Sea Region · Agrita Ozola: Integration of Cultural Heritage as a Resource for Sustainable Development in Municipality - A Case of Durbe Manor in Tukums · Fredrik Fogelberg: Baltic Sea Algae as a Resource for Renewable Plant Nutrition and Bio-Fuel · Janis Gravitis/Janis Grabis/Oskars Bilovens/Andris Veveris: European Rice Husks Studies with Focus on Utilization Opportunities · Andrejs Lūsis: Removal of Hazardous Substances in Electronics - Processes and Techniques for SMEs · G. Shulga/O. Nestore/V. Shakels/B. Neiberte/A. Verovkins/T. Betkers/O. Belous/A. Žukauskaite/D. Ambrazaitene/M. Lukošius: Collaboration Research on a Modified Biopolymer as a Soil Stabiliser and Amendment · Sergio Ulgiati/Silvia Bargigli/Marco Raugei: Energy Life Cycle Assessment within a Zero Emission Framework · G. Vabolienė/A.B. Matuzevicius: The Research of Biological Phosphorus and Nitrogen Removal from the Waste Water using new Wastewater Treatment Technology · Péter Sipos: Modelling the Behavior of Heavy Metals Releasing from Sewage Sludge to Soils · Konstantin Drozd/Georgiy Geletukha: Feasibility Study of Wood-fired Boiler House Construction for Heat and Hot Water Supply of Slavutich City · L. Kliucininkas/D. Martuzevicius/J. Mockuvienė: Ambient Air Quality Mapping for Integrated Urban Traffic Flows · Maxim Slenkin/Nikolay Zhovmir: Development of Ecologically Friendly Technology for Gasification of MSW · Agnė Kazlauskienė/Pranas Baltrėnas: Chloride and Sodium Concentrations in Snow Cover on Roadsides of Highway Panevėžys - Šiauliai in Lithuania · V. Biziks/B. Andersons/Z. Cakste/G. Zakis/B. Neiberte: Utilization of Pine Bark as Waste Wood for Soil Improvement · J. Rizhikovs/M. Puke/J. Zandersons/N. Vedernikovs/G. Dobeles/A. Tardenaka/B. Spince: Impact of Water-Soluble Substances of Birch Lignocellulose on the Mechanical and Sorption Properties of Granular Activated Carbon · Kristina Ložienė/Petras R. Venskutonis: Variation of Chemical Composition of Essential Oils in *Thymus serpyllum* L. subsp. *serpyllum* growing wild in Lithuania · J. Pukite/S. Kühl/W. Wilms-Grabe/C. von Friedeburg/T. Deutschmann/S. Sanghavi/J. Hollwedel/S. Beirle/C. Frankenberg/M.F. Khokhar/M. Grzegorski/T. Marbach/B. Kirchhof/S. Kraus/U. Platt/T. Wagner: SCIAMACHY - Limb Measurements as a New Tool for Stratospheric Ozone Studies · Pille Meier/T. Kaps/U. Kallavus: Behaviour of Pinewood (*Pinus Sylvestris*) in Various Mixtures · Adrienn Tóth: A Method Supporting Sustainable Landuse Management Applying Soil Erosion Models and Ecological Investigations · Dainis Ozols: Landform Map and Sediments of North Vidzeme · E. Reintam/J. Kuht/K. Trükmann/J. Puust: Composition of Weed Community Depending on Soil Compaction in Barley Field · Katrin Trükmann/Endla Reintam/Jaan Kuht/Virgo Rääts: Use of Biological Methods to loosen Compacted Soil · Ina Alsiņa/Laila Dubova: Physiological Activity of Sapropel Decomposition Products · Andrea Wallin: Nutrient Transport Modelling in the Daugava River Basin · Edgars Andersons: Forest Fire Monitoring from Satellites · Remigijus Čiegis/Dalia Gineitienė: Sustainable Community Development and the Role of Social Capital · Agnes Haraszti: Corporate Responsibility at an International Level - Stakeholder Management in Multinational Firms as an Integrative Approach towards Sustainability · Andris A. Spricis: Concepts for Education of Sustainable Development at the Faculty of Chemistry of University of Latvia

**22** · Walter Leal Filho / David Carpenter (eds.)

## **Sustainability in the Australasian University Context**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2006.

293 pp., num fig. and tables

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Sustainable development, i.e. the use of existing natural resources in a way that they are available in the long term for future generations, holds a central position at an international level. Sustainability has also

found its way into academia, especially in North America, Europe and Australasia, where many universities include it in their programs. Due to their wealth of experiences and well-organised structure, Australasian universities provide a good example of how to promote sustainability in respect of policy as well as academic practice. In order to succeed and to last, sustainability initiatives must be incorporated into the structures and operational systems of universities. In addition to traditional efforts towards making provisions for sustainable development elements in the areas of teaching or research, a sustainability dimension must also be considered as part of extension works, operations, and in staff training. This book discusses the context of sustainability in the Australasian tertiary sector, provides examples of innovative education for sustainability initiatives, and presents details of leading campus greening projects. The authors hope that these examples can help and inspire people in other countries and regions as well.

*Contents:* Kate Sherren: Pillars of Society: The Historical Context for Sustainability and Higher Education in Australia – Kate Sherren/Libby Robin: A Curriculum for a Cause? · Robert Dyball/David Carpenter: Human Ecology and Education for Sustainability · Peliwe P. Mnguni/Susan Long: Partnering for Sustainability: A Task not for the Faint-Hearted · John Reid/David Carpenter/Bart Meehan: Art for Earth's Sake: Creative and Interdisciplinary Collaborations for Sustainability in the Tertiary Sector · Stefan Kaufman/Will Symons/Zafi Bachar: The Green Steps Program: Fostering Environmental Change Agents · Sarah Holdsworth/Sarah Bekesy/Peliwe Mnguni/Carolyn Hayles/Ian Thomas: Beyond Leather Patches (BEP): Sustainability Education at RMIT University · Carl Stepath/Hilary Whitehouse: Ripple Effects – A Study of the Learning Outcomes of Taking University Students to a Local Coral Reef · Almut Beringer/Peter Martin: Toward sustainable living through outdoor education · Peter Newman: The Sustainability Journey at Murdoch University · Belinda Towns/Chris Cocklin: Triple Bottom Line (TBL) Reporting and Strategic Change in Higher Education · Mark Boulet: The Monash University Green Office Program: Engaging Staff in Sustainable Work Practices · David Carpenter/Beth Mitchell/Bart Meehan: Planning for Biodiversity: a Challenge for Universities · Kathryn I. Hewson/Leanne K. O'Brien/Rachel M. Barker/Jeffrey G. Weston: Restoring the Waterways of University of Canterbury, Christchurch, New Zealand · Robin Tennant-Wood/John Sullivan: Towards a model for best practice recycling in the tertiary sector · Ross Kapitzke: Fish Passage Prototypes: Integrating Research, Teaching and Conservation · Barbara Dolamore/Ian Milne/Grant McPhail/David Currie: From Policy to Practice: Environmental Management at Christchurch Polytechnic Institute of Technology · Su Wildriver: Preventing Pollution from the Australian National University

21 · Walter Leal Filho / Dieter Greif / Bernd Delakowitz (eds.)

## **Sustainable Chemistry and Biotechnology – A Contribution to Rivers Management**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2006.

227 pp., num. fig., tables and graphs

ISBN 978-3-631-55053-3 · hardback, clothbound € 41,10

The sustainable use of river basins is one of the top environment priorities in Europe. There are many initiatives aimed at the promotion of the sustainable development of river areas around the Baltic and around Europe as a whole, a process greatly accelerated by the introduction of the Water Framework Directive (WFD), which obliges all EU countries to improve the standards in which they use their water and river resources. This book, prepared in the context of the Interreg IIIB Project *Watersketch*, is an attempt to promote a dialogue on the topic, linking aspects of sustainable biochemistry and biotechnology with elements of sustainable river management. It will serve the needs of water and river management specialists in two ways: it presents various scientific and technological approaches

to river management and illustrates the epistemological breadth of the discipline, and also builds on specialised topical biotechnological and chemistry-related knowledge. The latter is especially useful to geographers and planners alike, who could perhaps adapt some of the techniques and components illustrated in the various chapters of this book to their own work.

*Contents:* Bernd Delakowitz: REACH – The Thorney Road to a Coherent European Chemicals Policy based on the Principles of Precaution and Sustainability · Günther Meinrath: Metrology for a Sustainable Development · Markus Will: Biotechnology and Chemistry towards Sustainable Development? Assessment with Life Cycle Tools · Antje Siol/Doris Sövegjarto-Wigbers: Thinking in Terms of Structure-Activity-Relationship – a Chance for more Sustainability in Chemistry · Annett Fuchs/Dieter Greif: Regenerating Raw Materials: Synthesis Potential for the Chemical and Pharmaceutical Industry · Dieter Greif/Annett Fuchs: Investigations of Chemical Reactions with Long Reaction Times using a Microwave oven for Organic Syntheses · Hennie van de Coevering: Phosphate Recovery in the Context of Water Treatment Plants and the Phosphate Industry · Walter Leal Filho: Waters-ketch: Trends in Sustainable River Monitoring in the Baltic: Some Scenarios for Sustainable River Management · Martin Hofrichter/René Ullrich/Kari Steffen: Application of Fungi and Their Versatile Biocatalysts in Sustainable Technologies · Roland Schubert/Gerhard Müller-Starck: Bioindication via Monitoring Genetic Variation in Tree Populations: Tools Applicable under Stressful Environments · Adam Pawelczyk/Barbara Kolwzan/Kazimierz Grabas: Bioremediation of Grounds Polluted with Petroleum Products · Dobieslaw Nazimek/Jerzy Niecko, Agnieszka Marcewicz-Kuba: Catalytic Method for SO<sub>2</sub> and NO<sub>x</sub> removal

**20** · Walter Leal Filho (ed.)

## **Handbook of Sustainability Research**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2005.

757 pp., num. fig. and tables

ISBN 978-3-631-52606-4 · hardback € 93,30

This handbook introduces concepts, ideas and methods of sustainability research based on real examples. It is divided into four sections. One part deals with theoretical aspects of sustainability and refers to theoretical approaches to sustainability research. Another section elaborates on more practical approaches to sustainability research, offering views and perspectives from various researchers, illustrating how regulations, laws and political frameworks influence sustainability. A third part treats education for sustainability and presents research and practical projects, showcasing how sustainability research may focus in formal and non-formal education. The final section draws some conclusions based on the body of experiences and knowledge gathered by the authors. This handbook will be of great use to educators, scientists, researchers, politicians, environment activists, teachers and others interested in sustainability and in the implementation of results of sustainability research.

*Contents:* Robert D. Bixler/J. Joy James: Environmental Socialization: The Critical Peripheral? · Rosemary Cousin: A Theoretical Framework for Measuring the Sustainability Capacity of Modes of Governance · Alexander Fehér/Lýdia Končeková: An Analysis of Indicators for Sustainable Land Use based on Research in Agricultural Landscape · Tasoulla Hadjiyanni/Julia Williams Robinson: Incorporating Cultural Issues in Sustainable Housing Design – The Case of the Hmong · Klaus Hubacek/Guan Dabo/Laixiang Sun: An Analysis of China's Water Problems: A Long Term Pers-pective · Roderick J. Lawrence: Human Ecology and its Applications for Sustainability Research · Michael Ornetzeder/Harald Rohracher: Social Learning, Innovation and Sustainable Technology · Daniel G. C. Rainham/Ian McDowell/Jeff Wilson: Does Improving Human Well-being

inevitably Drain Natural Capital? · Maaris Raudsepp/Mati Heidmets: Sustainability as a Regulative Idea and Norm of Behavior: Social and Psychological Aspects · Joseph P. Reser/Joan M. Bentrupperbäumer: The Psychosocial Impacts of Visitation and Use in World Heritage Areas: Researching and Monitoring Sustainable Environments and Encounters · Sarah Bell: The Oil Mallee Project: Sustainable Industry Development in Western Australia · Kathryn Buselich: Transactional Space: A Transformative Process for Sustainability Deliberation piloted with the Western Australian Collaboration · Guillaume Fontaine: Governance and the Role of Civil Society: The Case of Oil and Gas Extraction in the Andean Amazon · Gary Gumpert/Susan J. Drucker: Media and Sustainability · Karli James/Helen Lewis/Leanne Fitzpatrick/Kees Sonneveld: Sustainable Packaging Systems Development · Jeffrey R. Kenworthy: Sustainable Urban Transport: Developing Sustainability Rankings and Clusters based on an International Comparison of Cities · Peter Newman: Regional Sustainability: Principles and Practices with a Case Study on Western Australia · Walter Leal Filho/Skaidre Zickiene/Zita Tamasauskiene: An Appraisal of the Application of Indicators for Assessing Sustainable Development · Mauri Åhlberg: Integrating Education for Sustainable Development · M. J. Barrett/Paul Hart/Kathleen Nolan/Ali Sammel: Challenges in Implementing Action oriented Sustainability Education · Elena Camino/Giuseppe Barbiero/Anna Perazzone/Laura Colucci-Gray: Linking Research and Education to promote an Integrated Approach to Sustainability · Julie Davis/Noeleen Rowntree/Megan Gibson/Robert Pratt/Anissa Eglington: Creating a Culture of Sustainability: From Project to Integrated Education for Sustainability at Campus Kindergarten · Sérgio Leite/Mário Freitas/Ana Sêneca: Promoting Education for Sustainable Development through Communitarian Problem Solving: A Case Study in the National Park of Peneda-Gerês · Solly Mosidi: Is Local Government ready for a Decade for Education for Sustainable Development? A Case of Govan Mbeki Municipality: South Africa · Julie Newman/Eleanor Abrams: Reaching beyond Compliance: Obstacles to Integrating Sustainability into Decision-making Processes in an Institution of Higher Education · Constantina Skanavis/Vassiliki Petreniti/Kleopatra Giannopoulou: Models Assessing Responsible Environmental Behavior of Educators in Sustainable Development Programs · Patricia Solís: My Community, Our Earth: Geographic Learning for Sustainable Development · Lindsay Cole/Tarah Wright: Assessing Sustainability on Canadian University Campuses: The Development of a Campus Sustainability Assessment Framework · Walter Leal Filho: Sustainable Development Communication: International Approaches and Practice

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## **Perspektiven der Ingenieurökologie in Forschung, Lehre und Praxis**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2005.

214 S., zahlr. Abb. und Tab.

ISBN 978-3-631-53566-0 · br. € 34,10

Die Ingenieurökologie als Anwendung der Prinzipien der Ökologie in Technik, Wirtschaft und Gesellschaft setzt sich im nationalen und internationalen Rahmen immer mehr durch, weil die natürlichen und finanziellen Grenzen der Umweltnachsorge und des rein technischen Umganges mit Naturressourcen immer deutlicher zutage treten. In 15 Beiträgen aus den Bereichen Wasserreinigung, Hochwasserschutz, Gewässerrenaturierung, Stoffstrommanagement und ökologisches Bauen wird erläutert, wie „Gratisleistungen“ der Natur gezielt zur Verringerung von Belastungen der menschlichen Umwelt sowie zur eigendynamischen Regeneration geschädigter Ökosysteme genutzt werden können. Dabei wird ein weiter methodischer Bogen von der Mikrobiologie über den naturnahen Wasserbau und die Modellierung von Stoffflüssen bis hin zu rechtlichen Betrachtungen gespannt.

*Aus dem Inhalt:* V. Lüderitz/W. Leal Filho/Gunther Geller: Einleitung · Gunther Geller: Ingenieurökologie im deutschsprachigen Raum: Grundlagen und Beispiele · Wenke Kahrstedt/Yannick Duprat: Das

Studium der Ingenieurökologie an der Hochschule Magdeburg-Stendal · R.M. Gersberg: Alternative Methods to Evaluate Pathogen Removal and Risk in Constructed Wetlands · Anton Lenz: Feuchtgebietstechnik – Grundsätze und Einsatzmöglichkeiten · Heribert Rustige: Perspektive und Stand von Bewachsenen Bodenfiltern bei der Abwasserbehandlung in Deutschland · M. Tzschirner/Robert Jüpner: Wechselwirkung zwischen Auennutzung und Hochwasserschutz · Rolf Meindl: Hochwasserschutz contra Eigentumschutz · M. Matthies/J. Berlekamp/N. Graf/S. Lautenbach: Entscheidungsunterstützungssystem für das Gewässergütemanagement der Elbe – Konzept und Systemgestaltung · André Assmann/Jessica Kempf: Wege zu einem dezentralen, integrierten Hochwasserschutz · Volker Lüderitz/Uta Langheinrich: The ecological potential of artificial and heavily modified waterbodies – opportunities of ecotechnology · Claudia R. Binder: What can Material Flux Analysis Contribute to Ecological Engineering? Examples from a Developing Country · Manfred Voigt: Nach den Möglichkeiten der Gesellschaft – Kommunikation, die Grundlage der Ingenieurökologie und des Ressourcenmanagements · Julia Gesenhoff: Dezentralisierung der Ver- und Entsorgungssysteme als ingenieurökologisches Konzept – Einfluss der Siedlungsstruktur auf die Einsatzmöglichkeiten dezentraler Abwassersysteme · Manfred Voigt: „Nach den Möglichkeiten des Ortes...“ – Dezentrale Ver- und Entsorgungssysteme in Städten als ingenieurökologisches Konzept · Detlef Glücklich: Ökologische Gesamtkonzepte – mit der „Stadtchaft“ als Zielstellung und ihre Umsetzung am Beispiel der Valley View University in Accra/Ghana

**18** · Walter Leal Filho / Bernd Delakowitz (Hrsg.)

## **Umweltmanagement an Hochschulen: Nachhaltigkeitsperspektiven**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2005.

201 S., zahlr. Abb. und Tab.

ISBN 978-3-631-52956-0 · br. € 37,10

Nachhaltige Entwicklung besitzt große Bedeutung für die Bereiche Politik, Wirtschaft, Umwelt und Soziales. Im Rahmen der Umsetzung werden diese Bereiche nicht isoliert, sondern als Synthese verstanden und in ihrer Wechselwirkung und Betrachtungsweise gleichberechtigt behandelt. Aus diesen Gründen stehen Hochschulen und Universitäten in zunehmendem Maße in der Verantwortung, eine multidisziplinäre und ethisch orientierte Form der Ausbildung zu entwickeln. Wie ist es sonst möglich, den wachsenden Problemen, mit denen sich die Menschheit des 21. Jahrhunderts konfrontiert sieht, zumindest ansatzweise zu begegnen? Hochschulen und Universitäten müssen sich mehr als bisher ihrer besonderen Vordenker- und Vorbildrolle bewusst werden und ihre Möglichkeiten für einen stetigen Transport von Information, Aufklärung und Bildung über die drängenden ökologischen und sozio-ökonomischen Probleme in die Gesellschaft nutzen. Nur so wird es der Menschheit von morgen möglich sein, in einer nachhaltigen und gerechteren Welt zu leben. Dieses Buch verknüpft das Themenfeld „Nachhaltigkeit“ mit dem organisatorischen Instrumentarium des Umweltmanagements und soll dazu beitragen, Wichtigkeit und Umsetzbarkeit von Nachhaltigkeitsstrategien noch sichtbarer zu machen. Es gibt zahlreiche Ansätze und Projekte an deutschen Hochschulen, in deren Mittelpunkt Umweltmanagement und/oder Nachhaltigkeit stehen. Doch nicht alle derartigen Ansätze oder Projekte sind bekannt. Dieser Band, welcher im Rahmen des Projekts *SmartLIFE* realisiert worden ist, stellt einige Ansätze dar mit der Hoffnung, dass daraus neue Impulse entstehen können.

*Aus dem Inhalt:* Walter Leal Filho: Nachhaltigkeit: Ein Thema der Zukunft · Bernd Delakowitz/Anke Hoffmann/Markus Will: Vom operativen Umweltmanagement zum Leitmotiv „nachhaltige Entwicklung“. Das Beispiel der Hochschule Zittau/Görlitz (FH) · Doris Sövegjarto-Wigbers/Harald Gilch: Um-

weltmanagement an der Universität Bremen – Umweltgerechtes Handeln · Edeltraud Günther/Jürgen Fröhlich/Kathrin Brömmer: Einführung und Umsetzung des Umweltmanagementsystems nach der EG-Öko-Audit-Verordnung an der TU Dresden · Anja Grothe-Senf: Nachhaltig lehren · Methoden in der Hochschulbildung · Matthias Kramer: Internationalität und Interdisziplinarität – Notwendige Bedingungen für die Umweltmanagementausbildung an Hochschulen · Hans-Peter Winkelmann: Vom Umweltmanagement zum Nachhaltigkeitsprozess an Hochschulen – Der kopernikanische Ansatz · Harald Gilch/Joachim Müller/Ingo Holzkamm/Friedrich Stratmann: Anwendung von Umweltmanagementsystemen an Hochschulen – Argumente, Probleme, Lösungen · Stephan Wolf/Ingmar Lippert: Hochschulen auf dem Weg zur Nachhaltigkeit: Möglichkeiten studentischer Partizipation in Umweltmanagementsystemen · Jana Brauweiler/Andreas Knaden/Andreas Sommer: Nachhaltigkeit an Hochschulen durch „blended learning“? · Walter Leal Filho: SmartLIFE: Entwicklung europäischer Ansätze im Bereich „nachhaltiges Bauen“ mit Hochschulbeteiligung

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## **Beitrag der Medien zum politischen Erfolg**

Forstwirtschaft und Naturschutz im Politikfeld Wald

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2004.

242 S., zahlr. Abb. und Tab.

ISBN 978-3-631-52404-6 · br. € 46,80

Forstwirtschaft und Naturschutz haben unterschiedliche Vorstellungen vom Wald. Um ihre Interessen durchzusetzen, versuchen sie, die Öffentlichkeit auf ihre Seite zu ziehen. Ziel dieser Arbeit ist es, den Erfolg der beiden Sektoren in der Medienöffentlichkeit und der Bevölkerungsmeinung aufzudecken. Basierend auf politik- und medienwissenschaftlichen Theorien werden Artikel zum Thema Wald aus vier überregionalen deutschen Tageszeitungen analysiert. Dabei zeigt sich, wo Forstwirtschaft und Naturschutz jeweils mehr Unterstützung finden, bei den Medien oder in der Bevölkerung. Zusätzlich werden jene Faktoren sichtbar gemacht, die die Auswahl der Berichterstattung mitbestimmen. Daraus ergeben sich Ansatzpunkte für eine verbesserte Medienarbeit der Akteure.

*Aus dem Inhalt:* Theorie Politikfeldanalyse und Medienselektion · Quantitative Inhaltsanalyse · Datenmaterial überregionale deutsche Tageszeitungen · Das Waldbild in den Medien und in der Gesellschaftsmeinung · Medienberichterstattung als politischer Faktor im Konflikt

16 · Walter Leal Filho / Michael Littleddyke (eds.)

## **International Perspectives in Environmental Education**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2004.

341 pp., num. fig., tables and graphs

ISBN 978-3-631-52296-7 · pb. € 55,10

This book aims at introducing readers to the different ways in which environmental education is viewed and perceived on an international basis. It is one of the outcomes of the *First World Environmental Education Congress* (FWEEC) held in Espinho, Portugal, on 20<sup>th</sup>-24<sup>th</sup> May, 2003. FWEEC gathered 282 participants from 38 countries, offering an international platform for educators, scientists, researchers, scholars, politicians, technicians, activists, the media and teachers to present and debate key issues in environmental education world wide. It includes many of the papers delivered in

the Congress and a few additional ones, in an attempt to both document international experiences and promote them to a wide audience. This publication is meant to pave the ground for the UN International Decade of Education for Sustainable Development (2005-2014) by addressing one of the oldest and yet one of the most pressing needs in environmental education today: the need to document experiences and promote good practice. This book will be useful to those undertaking research, practical projects and doing works „on the ground“ in both formal and non-formal teaching. The extensive body of information and knowledge gathered by the authors will be helpful to both researchers and practitioners, contributing towards developing their capacity so that they may become even better at what they do.

*Contents:* Environmental education through interactive means · Environmental education and fieldwork · Environmental education in formal education · Environmental education and information technologies · Environmental education in waste management · Environmental education and partnerships · Environmental education and fauna awareness · Environmental education in higher education · Environmental education and citizenship · Environmental education and adult education · Environmental education and Agenda 21

**15** · Walter Leal Filho / Arnolds Ubelis (eds.)

### **Integrative approaches towards sustainability in the Baltic Sea Region**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2004.

556 pp., num fig. and tables

ISBN 978-3-631-52018-5 · pb. € 83,40

The challenges of sustainable development require that everybody, every institution and every nation work towards long-term strategies in order to move away from unsustainable practices. The same line of thinking applies to all nations around the Baltic Sea. A general challenge for the Baltic Sea region is to broaden the interest of people in discussions of national approaches supporting sustainability. Finding effective instruments to support the process of sustainable development in countries in transition with an emerging and largely inexperienced entrepreneur community and economically fragile, is as important as the promotion of long-term integrated sustainability strategies in countries which have well established democracies. The knowledge of the ongoing changes and the driving social, economic and ecological factors essential for the implementation of sustainable development in countries in transition must be broadened. A special need seen in the three Baltic countries – Lithuania, Latvia, and Estonia – as elsewhere in the Baltic region, is the need to avoid development patterns of „business as usual“ and to gain access to information and to advancements in sustainable development both in Europe and worldwide. The Baltic countries now joining the EU have to build capacity, for example by establishing teams of young researchers to draw up sustainable development strategies at the national level, which are consistent with European strategies. A bottom-up flow from the grass-root level is required to change the pattern of development strategies in the Baltic countries. The Conference „Integrative Approaches Towards Sustainability“, whose experiences are documented in this book, was held on 26-29 March, 2003.

*Contents:* Sustainable development and the 6th Framework Programme · The zero emissions concept and prospects · The industrial symbiosis at Kalundborg, Denmark · Reshaping competitive forces in the industrialized world · How can the Baltic countries' resources be oriented towards sustainability? · Sustainable forestry in Finland – NO sustainability without radical de-

materialisation · Global SMALL (Sustainable Management for All Local Leaders) initiative for sustainability · Environmentally sustainable domestic consumption – Approaches for local and regional sustainable development – experiences from the Baltic 21 Education process · Sustainability teaching at a technical university

**14** · Ulisses Azeiteiro / Fernando Gonçalves / Walter Leal Filho / Fernando Morgado / Mário Pereira (eds.)

## **World Trends in Environmental Education**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2004.

268 pp., num fig., tables and graphs

ISBN 978-3-631-51810-6 · pb. € 55,10

This book contains the keynote papers delivered at the First World Environmental Education Congress (FWEEC) held in Espinho, Portugal in May, 2003. The FWEEC gathered participants from 38 countries, offering an international platform for educators, scientists, researchers, scholars, politicians, technicians, activists, media and teachers to present and debate world wide issues in environmental education. The themes it deals with include environmental policies and education, media and communication, environmental activism and citizenship, local activities, sustainable agriculture and tourism, economics and sustainability, communication, evaluation techniques, teacher training and general aspects of research. The papers offer an up-dated overview of various trends related to international environmental education, including aspects of research, teaching and project based work. Due to its nature and international scope, this publication is of special interest to educators, scientists, researchers, politicians, technicians, environment activists, teachers and others, interested in the ways environmental education is seen and practiced all over the world.

*Contents:* Some aspects of environmental education in member countries of the European Union · Conferences on environmental education in Europe · Distance Learning for sustainability education · Evaluating environmental education programmes effectively · Programme, Performance, and Professionalism · Improving the Field by Data · Environmental Education · The Portuguese experience · Environmental Education in Transition · Looking Beyond Sustainability and Sustainable Development · A review of a selection of environmental education research in southern Africa

**13** · Lars Wohlers (Hrsg.)

## **Methoden informeller Umweltbildung**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2003. 169 S., zahlr. Abb.

ISBN 978-3-631-50354-6 · br. € 34,10

Erst seit wenigen Jahren findet im deutschsprachigen Raum eine verstärkte theoretische Beschäftigung mit informeller Umweltbildung statt. Neben der Erkenntnis der Bedeutsamkeit informeller Lernprozesse bestehen derzeit noch erhebliche Defizite hinsichtlich praxisorientierter Qualifizierungsmöglichkeiten in diesem Bereich. Hier setzt dieses Methodenbuch an. Die vorgestellten Methoden informeller Umweltbildung sind gedacht als Einstieg und übersichtsartiger Beitrag zur Qualifizierung von in diesem Bereich tätigen Mitarbeitern. In Frage kommende Einrichtungen sind Zoos, Schutzgebiete, Botanische Gärten, Planetarien, Museen (u.a. Science Center), Aquarien, etc.

*Aus dem Inhalt:* Lars Wohlers: Informelle Umweltbildung als Edutainment – Probleme und Chancen · Cordelia Vaerst/Jörg Pauli/Raimund Finke: Gästeansprache · Arne Mensching/Michael Steeghs: Gästeführungen · Bettina Wilke: Theaterpädagogische Projekte · Lars Wohlers: Texte · Peter Szekeres: Lehrpfade · Helma Schröder: Audiovisuelle Medien · Eileen Förster: Karten und Kartenmaterialien · Eva Siekierski: Evaluation

**12** · Walter Leal Filho (ed.)

## **International Experiences on Sustainability**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2002.

238 pp., num. fig. and tables

ISBN 978-3-631-50110-8 · pb. € 43,20

There is a wide range of projects, institutions and initiatives in the field of sustainable development which have been taking place and which have provided a concrete contribution to the cause of sustainability as a whole. Unfortunately, most are little known. This perceived need for information on international perspectives on sustainability is addressed in this book. It gathers a set of papers which provide a synthetic overview of the effectiveness of implementation activities and initiatives at various levels, bringing together various clusters of organisations and a wide range of approaches. Whilst a special emphasis is given to Germany, from where reports on the work of the German Council for Sustainable Development, the German International Co-operation Agency and the German Federal Environment Foundation are documented, examples of other initiatives taking place elsewhere in Europe and North America are provided. Contributors to this book have made a great deal of efforts in providing synthetic overviews of the effectiveness of implementation activities at different levels, drawing lessons with a wide geographical scope, broad relevance and wider implications and applications. Readers will notice that some major new developments and outstanding problems needing further attention are outlined. Last but not least, the book provides concrete examples of governmental, inter-governmental, and non-governmental successful or promising efforts, showing that sustainability as both a process and as a goal may be pursued in different ways.

*Contents:* Sustainability: world trends and future perspectives · Sustainable Development as a Framework for Technical Co-operation · Supporting Sustainable Development: Experiences from the Deutsche Bundesstiftung Umwelt · Women, Transport, Cities Sustainability and Social · Participation · Catalysts for sustainability: NGOs and regional development initiatives

**11** · Walter Leal Filho (ed.)

## **Teaching Sustainability at Universities**

Towards curriculum greening

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2002.

576 pp., num. fig. and tab.

ISBN 978-3-631-39837-1 · hardback, cb € 79.– (out of print/vergriffen)

10 · Rolf Jucker

### **Our Common Illiteracy**

Education as if the Earth and People Mattered

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2002. 364 pp.  
ISBN 978-3-631-39117-4 · pb. € 54,70 (out of print/vergriffen)

9 · Walter Leal Filho (ed.)

### **Environmental Careers, Environmental Employment and Environmental Training**

International Approaches and Contexts

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2001.  
199 pp., num. fig. and tables  
ISBN 978-3-631-38686-6 · pb. € 38,70

This book presents an overview of experiences, projects and approaches related to employment in the environment sector and of trends related to sustainability. It also contains an article on career prospects for women in the field of engineering, of which environmental engineering is an important component. This publication, prepared as part of the project „Careers in Engineering“ funded by the EU's LEONARDO Programme, documents a variety of experiences on environmental training useful to those involved with curriculum development, curriculum planning and other aspects of environmental education.

*Contents:* Experiences of Women Engineers in Ireland · Fostering Employment in the Environment Sector in Europe · Continuing Education in the Environmental Sciences · Environmental Education at Universities of Applied Sciences · Professionalization and Professional Activities in the Swiss Market for Environmental Services · The Environmental Protection Industry and Environmental Jobs in the USA

8 · Walter Leal Filho (ed.)

### **Communicating Sustainability**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2000.  
496 pp., num. fig. and tab.  
ISBN 978-3-631-37174-9 · pb. € 74,40

Prepared as a contribution to the Rio+10 process, this book offers a wide range of views and perspectives on sustainability per se and on environmental education and communication in particular. It is being published in the framework of the project „Sustainability Centres in the North Sea Region“ but significantly enhanced to include case studies and examples of on-going works in a number of industrialised and developing nations. This publication is, thanks to its scope and international nature, of interest to anyone concerned with the sustainability debate, one of the most important matters in the 21<sup>st</sup> Century.

*Contents:* Communicating sustainability: some international considerations and challenges · The media as a tool for communication on the environment and sustainability · Environmental communication · Corporate sustainability · Simulations · Curriculum · Communicating biodiversity

7 · Manfred Oepen / Winfried Hamacher (eds.)

## **Communicating the Environment**

Environmental Communication for Sustainable Development

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2000.

294 pp., num. fig. and tab.

ISBN 978-3-631-36815-2 · pb. € 35,70

A group of international communication and environmental specialists have put together a reader on environmental communication (EnvCom) that show-cases related concepts, success stories and lessons learned in this field. The book, written in a non-academic language, lobbies for the recognition, support and replication of „best practices“ in EnvCom with policy and decision makers of donor and receiver organizations, especially in Third World countries. Readers who may most benefit from the book are middle management planners at NGOs, government agencies, and development organizations who run environmental projects as they will learn how to integrate EnvCom as a management tool into planning and implementation. This will also be relevant to environmental project staff of those organizations who are supposed to put communication and non-formal education into practice.

*Contents:* Introduction · Conceptual Framework · EnvCom Strategy Development · Case Studies · Lessons Learned and best practices · Resources and References

6 · Wout van den Bor / Peter Holen / Arjen Wals / Walter Leal Filho (eds.)

## **Integrating Concepts of Sustainability into Education for Agriculture and Rural Development**

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2000.

329 pp., num. fig. and tab.

ISBN 978-3-631-36425-3 · pb. € 57,40

The book deals with the issue of sustainability as a whole and to its application in the context of higher agricultural education in particular. It contains a wide range of international experiences on the subject, deriving from case studies, projects and research performed in Europe, North America and Oceania. This publication provides a key contribution to the debate on sustainability at university level and on how it is applied to agriculture and rural development.

*Contents:* Sustainability · Higher Education · Agriculture Education · Rural Development · Case studies

5 · Walter Leal Filho (ed.)

## **Sustainability and University Life**

2nd, revised edition

Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Wien, 2000.

270 pp., num. tab. and graf.

ISBN 978-3-631-36810-7 · pb. € 51,40

Prepared in cooperation with the Association of University Leaders for a Sustainable Future (ULSF), this book presents a number of case studies and experiences which illustrate how higher education

institutions (e.g. universities and colleges) may pursue sustainability. A wide range of views and perspectives illustrate how, via projects, networks, academic programmes, curriculum greening initiatives and student involvement, higher education institutions in various countries (for example the United States, the United Kingdom, the Netherlands, Switzerland, Germany, France) are trying to bring sustainability closer to their institutional lives.

*Contents:* Walter Leal Filho: Sustainability and University Life: some European Perspectives · Richard M. Clugston/Wynn Calder: Critical Dimensions of Sustainability in Higher Education

4 · Mauri Ahlberg / Walter Leal Filho (eds.)

### **Environmental Education for Sustainability: Good Environment, Good Life**

Frankfurt am Main, Berlin, Bern, New York, Paris, Wien, 1998. 300 pp., num. graph.  
ISBN 978-3-631-33617-5 · pb. € 45,00 (out of print/vergriffen)

3 · Walter Leal Filho (ed.)

### **Environmental Engineering: International Perspectives**

Frankfurt am Main, Berlin, Bern, New York, Paris, Wien, 1998.  
194 pp., numerous fig. and tab.  
ISBN 978-3-631-33455-3 · pb. € 38,70

This book introduces several concepts and initiatives which show the applied nature of environmental engineering in various countries and contexts. Prepared as part of the Programme for Environmental Engineering in Europe (PREENE) the book goes beyond the approach of classical themes and instead focuses on issues such as lifecycle analysis, waste management, environmental law, regulations, eco-efficiency and environmental ethics, also providing an overview of future trends and scenarios. It supplies an important source of reference for university students, engineers, practitioners and all those interested in the practicalities of environmental conservation.

*Contents:* Walter Leal Filho: Concepts of Environmental Engineering · Environmental lifecycle analysis · The history of waste management · Principles and challenges for sustainable development and construction · Eco-design · Ethics · Eco-efficiency

2 · Walter Leal Filho / Farrukh Tahir (eds.)

### **Distance Education and Environmental Education**

Frankfurt am Main, Berlin, Bern, New York, Paris, Wien, 1998. 180 pp., num. graph. and tab.  
ISBN 978-3-631-33002-9 · pb. € 32,3 (out of print/vergriffen)

1 · Walter Leal Filho (Hrsg.)

## **Umweltschutz und Nachhaltigkeit an Hochschulen**

Konzepte-Umsetzung

Frankfurt am Main, Berlin, Bern, New York, Paris, Wien, 1998. 198 S., zahlr. Graph.  
ISBN 978-3-631-32275-8 · br. € 32,30

Das Prinzip der Nachhaltigkeit ist nicht allein für einzelne Länder von großer Bedeutung, sondern auch eine wichtige Komponente der Aktivitäten, die von Unternehmen, der Industrie und nicht zuletzt von Institutionen, wie beispielsweise den Universitäten, unternommen werden. Zusammengestellt wurde dieses Buch aufgrund der Notwendigkeit, zu diskutieren, wie das Prinzip der Nachhaltigkeit effektiv in alle Bereiche des universitären Lebens Einzug halten kann. Es konzentriert sich auf einige relevante Faktoren und Themen, die mit der Einführung nachhaltiger Praktiken in das universitäre Leben verbunden sind, wobei besondere Aufmerksamkeit auf verschiedene Wege und Techniken gelegt wird, die sich als brauchbar für die Erreichung eines solchen Ziels erwiesen haben.

*Aus dem Inhalt:* Walter Leal Filho: Umweltschutz und Nachhaltigkeit an Hochschulen: Europäische Beispiele · Friedrich Stratmann: Situation des Umweltschutzes an deutschen Hochschulen · Wolfgang Schlotmann: Umweltschutz: Koordination auf Hochschulebene · Manfred Blome: Öko-Auditing an der Universität Osnabrück

### **Außerhalb der Reihe erschienen**

Walter Leal Filho (Hrsg.)

## **Lifelong Learning and Environmental Education**

Frankfurt am Main, Berlin, Bern, New York, Paris, Wien, 1997. 201 pp.  
ISBN 978-3-631-32258-1 · pb. € 28,- (out of print/vergriffen)

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