Umweltbildung, Umweltkommunikation und Nachhaltigkeit

Environmental Education, Communication and Sustainability

Herausgegeben von
Edited by
Walter Leal Filho
This book presents essential learning approaches. It introduces educational and training activities, as well as various innovative methods aiming at the development of practical skills, in order to strengthen the continuous process of environmental education, and in particular the education for sustainable development (ESD). In doing so, it focuses on three dimensions (social, economic and environmental) as a means of achieving an effective change of behaviour and „tries to bridge the gap between science and environmental education by describing a set of projects, initiatives and field activities“. A special emphasis is put on teacher training programmes, conception, and implementation, highlighting the problems and barriers, which prevent development as far as integration of sustainability issues in higher education is concerned.

It is widely acknowledged that sustainable development is a long-term goal, which both individuals and institutions (and countries!) need to pursue. This important theme is characterized by an intrinsic complexity, since it encompasses ecological or environmental considerations on the one hand, and economic matters, social influences and political frameworks on the other. This makes provisions in respect of education for sustainable development a particularly challenging task, but one which is feasible and achievable, provided the right elements are put into place. This book is an attempt to foster the cause of education for sustainable development, by documenting and disseminating experiences from different parts of the world, where learning for, about and through the principles of sustainability is taking place, in various sets and contexts, in both industrialized and developing nations. A special feature of this book is that it not only presents a wide range of philosophies, approaches, methods and analyses with respect to education for sustainable development across the world, but also documents and disseminates concrete case studies, which show how education for sustainable development may be realized in practice.

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.

Technical Education for Sustainability

An Analysis of Needs in the 21st Century

244 pp., num. tables and graphs
ISBN 978-3-631-58594-8 · hardback € 54,95

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

Interdisciplinary Aspects of Climate Change

507 pp., num. fig., tables and graphs
ISBN 978-3-631-58153-7 · hardback, clothbound € 83,95

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), 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“ (ICCIP). 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-

Conflict Resolution in Coastal Zone Management


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 IIIB (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.


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
406 pp., num. fig., tables and graphs
ISBN 978-3-631-55406-7 · hardback, clothbound € 68,95

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.

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 IIIB (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.


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

Innovative Approaches to Education for Sustainable Development


The present book is a compilation of some of the key note speeches and papers delivered at the Third World Environmental Education Congress – 3rd WECC (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.
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.

Innovation on Sustainable Development from the Environmental Education Field · James Derounian:

23 · Walter Leal Filho / Arnolds Ubelis / Dina Berzina (eds.)
Sustainable Development in the Baltic and Beyond
611 pp., num. fig., tables and graphs
ISBN 978-3-631-55282-7 · hardback, clothbound € 113,95

This book documents and promotes the experiences from the 2nd Conference on Integrative Approaches Towards Sustainability (SHARING), held in Jurmala, Latvia, on May 11th to 24th, 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 integratives 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:

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.
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 III B 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.

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:


19 · Walter Leal Filho / Volker Lüderitz / Gunther Geller (Hrsg.)

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

214 S., zahlr. Abb. und Tab.
ISBN 978-3-631-53566-0 · br. € 42,95


Beitrag der Medien zum politischen Erfolg
Forstwirtschaft und Naturschutz im Politikfeld Wald

242 S., zahlr. Abb. und Tab.
ISBN 978-3-631-52404-6 · br. € 56,95


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

International Perspectives in Environmental Education

341 pp., num. fig., tables and graphs
ISBN 978-3-631-52296-7 · pb. € 67,95

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 (FWECC) held in Espinho, Portugal, on 20th-24th May, 2003. FWECC 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

Integrative approaches towards sustainability in the Baltic Sea Region

556 pp., num fig. and tables
ISBN 978-3-631-52018-5 · pb. € 101,95

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
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
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

Teaching Sustainability at Universities
Towards curriculum greening

Our Common Illiteracy
Education as if the Earth and People Mattered
Environmental Careers, Environmental Employment and Environmental Training
International Approaches and Contexts
199 pp., num. fig. and tables
ISBN 978-3-631-38686-6 · pb. € 46,95

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

Communicating Sustainability
496 pp., num. fig. and tab.
ISBN 978-3-631-37174-9 · pb. € 90,95

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 21st 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
A group of international communication and environmental specialists have put together a reader on environmental communication (EnvCom) that showcases 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

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
Sustainability and University Life

2nd, revised edition

270 pp., num. tab. and graf.
ISBN 978-3-631-36810-7 · pb. € 63,95

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

Environmental Education for Sustainability: Good Environment, Good Life

ISBN 978-3-631-33617-5 · pb. € 45,00 (out of print/vergriffen)

Environmental Engineering: International Perspectives

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
Distance Education and Environmental Education
180 pp., num. graph. and tab.
ISBN 978-3-631-33002-9 · pb. € 32,3 (out of print/vergriffen)

Umweltschutz und Nachhaltigkeit an Hochschulen
Konzepte-Umsetzung
ISBN 978-3-631-32275-8 · br. € 32,30
