

Table of Contents

Preface.....	V
List of Contributors.....	XIII
1 Editorial - Environmental Challenges and Management of Natural Resources	1
<i>Michael Schmidt, Vincent Onyango and Dmytro Palekhov</i>	
1.1 Introduction	1
1.2 Aim of this Volume.....	2
1.3 Outline of this Volume.....	2
Part I - Energy Efficiency and Innovation	5
2 Comparative Analysis of Brazilian Residual Biomass for Pellet Production.....	7
<i>Bruna Missagia, Maurício Ferreira Silva Corrêa, Islam Ahmed, Hans-Joachim Krautz and Peter Ay</i>	
2.1 Introduction	7
2.2 Situation Description.....	8
2.3 Materials and Methods	9
2.4 Results and Discussion.....	10
2.5 Conclusions	13
3 Bioenergy Production: Special Emphasis on Rice Husks Usage in India	15
<i>Satyanarayana Narra</i>	
3.1 Introduction	15
3.2 Case study: Rice-husk Based Cogeneration Clean Development Mechanism Project.....	16
3.3 Results and Discussions	20
3.4 Conclusions	21
4 Innovative Energy Concepts in the Water Supply Sector.....	23
<i>Christine Laures</i>	
4.1 Introduction	23
4.2 Concept of a Central Water Supply System	23
4.3 How Much Energy is Used in the Water Supply Sector – Some Selected Examples	24
4.4 Innovative Energy Concepts in the Water Supply Sector.....	26
4.5 Conclusions	30
5 Energy Conservation in Aerobic Wastewater Treatment Units.....	33
<i>Paul Pinamang Kyei</i>	
5.1 Introduction	33

5.2 Aerobic Wastewater Treatment Units (ATUs).....	33
5.3 Materials and Experimental Method	35
5.4 Results	35
5.5 Discussion	38
5.6 Conclusions	39
6 Technical and Economic Aspects of Grid-connected Solar Photovoltaics in Brazil.....	41
<i>Jordi Cadilla</i>	
6.1 Introduction	41
6.2 The Energy Sector of Brazil: Composition of Brazil's Primary Energy Matrix	42
6.3 Case Study: Roof-mounted Grid-connected PV System for a Sports Hall in South Brazil	46
6.4 General Conclusions	58
7 Wind Power Projects in India and Clean Development Mechanism (CDM) Approach.....	61
<i>Shrinivas Tukdeo and Satyanarayana Narra</i>	
7.1 Introduction	61
7.2 Wind Energy in India	61
7.3 CDM Approach	63
7.4 Case-study: 15 MW Wind Power Project in the State of Karnataka is Presented to Analyze the VER Market.....	64
7.5 Results and Discussion.....	66
7.6 Conclusions	66
8 The Clean Development Mechanism Worldwide and in Brazil	69
<i>Sören Noack</i>	
8.1 Introduction	69
8.2 Flexible Mechanisms of the Kyoto Protocol	70
8.3 Problems of the Clean Development Mechanism	71
8.4 The Clean Development Mechanism in Brazil.....	73
8.5 Case Study: The Plantar Project.....	75
8.6 Conclusions	77
9 Cleaner Production in Jeans Laundries in Northeast Brazil.....	79
<i>Sören Noack</i>	
9.1 Introduction	79
9.2 Socioeconomic Background.....	80
9.3 Environmental Impact of Jeans Laundries	82
9.4 Aspects of Energy Efficiency in Jeans Laundries	82
9.5 Future of Jeans Laundering in Caruaru and Toritama.....	86
9.6 Summary and Conclusions	88

10 Future of Alternative Energy in Thailand.....	91
<i>Angkarn Wongdeethai</i>	
10.1 Introduction	91
10.2 Thailand's Energy Status.....	92
10.3 Thailand's Alternative Energy Development	95
10.4 Conclusions and Recommendations	101
11 Energy Challenges, Problems and Strategies in China	105
<i>Shouke Wei</i>	
11.1 Introduction	105
11.2 International Status of China's Energy.....	107
11.3 Energy Challenges and Problems in China	109
11.4 Energy Strategies for Amendment	115
11.5 Conclusions	117
12 Review of Future Energy Supply and Targets for Climate Change: The Idea of Ecosystem Services	119
<i>Ernest Fongwa, Vincent Onyango and Albrecht Gnauck</i>	
12.1 Introduction	119
12.2 Global Climate Change Projections	123
12.3 Ecosystems Services as Targets for Climate Change	124
12.4 Understanding our Environment	126
12.5 Valuation of Ecosystem Services	126
12.6 Potential Markets for Ecosystem Services	128
12.7 Justifications for Developing Ecosystem Services	130
12.8 Conclusions	130
Part II - Planning and Decision-making.....	133
13 Requirements and Issues with Implementing SEA as a Sustainable Development Instrument in Ukraine.....	135
<i>Dmytro Palekhov and Michael Schmidt</i>	
13.1 Introduction	135
13.2 Concept of Sustainable Development in Ukraine.....	136
13.3 Issues with Implementing SEA as a Sustainable Development Instrument in Ukraine	140
13.4 Indicators of Sustainable Development in Ukraine	146
13.5 Conclusions and Recommendations	148
14 Spatial Analyses of Electricity Supply and Consumption in Turkey for Effective Energy Management and Policy-making	153
<i>Evren Deniz Yaylacı, Abdurrahman Bebel Ismaila, Onur Uşkay and Şebnem Düzgün</i>	
14.1 Introduction	153
14.2 Data Collection and Processing.....	154
14.3 Visualisation.....	155

14.4 Exploration.....	160
14.5 Conclusions and the Outlook for Further Study.....	166
15 How Risk Based Decision Making improves Energy Efficiency in Oil and Gas Industry	169
<i>Bibek Das and Robert Atkinson</i>	
15.1 Introduction.....	169
15.2 Why Oil and Gas?.....	170
15.3 Risk Based Decision-Making Process.....	171
15.4 ALARP Principle	173
15.5 Combined ALARP and Energy Efficiency	174
15.6 RDBM – Life Cycle Approach	174
15.7 Role of Legislation and Directives.....	176
15.8 Case Study 1: CAPEX Project.....	176
15.9 Case Study 2: OPEX Project.....	178
15.10 Barriers to Successful Application	179
15.11 Impetus to Implementation.....	180
15.12 Conclusions and Recommendations.....	180
16 A Critical Appraisal of Government Forestry Policy in View of Forest Sustainability in Cameroon	183
<i>Victor N. Cheo, Balgah Sounders Nguh, Adeline A. Awemo and Wolfgang Schluchter</i>	
16.1 Introduction.....	183
16.2 Problem Statement and Study Objective.....	184
16.3 Methodology	184
16.4 Evolution of Forest Administration and Policy Reforms in Cameroon.....	185
16.5 Current Government Forest Policy Framework	187
16.6 The Concept of Community Forests in Cameroon.....	188
16.7 Legislation as an Instrument of Regulating Forest Exploitation	189
16.8 Logging Ban on Rare Hardwoods.....	190
16.9 Sanctions	190
16.10 Other Forest Sustainability Initiatives.....	191
16.11 Conclusions and Recommendations.....	193
17 Agrofuels in Sub-Saharan Africa: Decision-making Criteria for Sustainability	197
<i>Vincent Onyango</i>	
17.1 Introduction.....	197
17.2 What are Agrofuels?.....	198
17.3 The Concerns over Agrofuels.....	200
17.4 Conclusions and Recommendations.....	204

Part III – Limits to Managing the Environment	209
18 Knowledge for Corporate Energy Management - Structural Contradictions and Hope for Change?	211
<i>Ingmar Lippert</i>	
18.1 Introduction	211
18.2 Rationality within Environmental Management.....	213
18.3 The BOTNACO ‘Programme’	215
18.4 Analysis: Knowledge and Contradictions	217
18.5 A Way Out – Based on Determined Negotiation?.....	224
18.6 Conclusion.....	225
19 River Management. Technological Challenge or Conceptual Illusion? Salmon Weirs and Hydroelectric Dams on the Kemi River in Northern Finland	229
<i>Franz Krause</i>	
19.1 Introduction	229
19.2 The Kemi River as a Hydropower Source.....	232
19.3 Salmon Weirs on the Kemi River.....	234
19.4 Degrees of Management.....	238
19.5 Controlling a River’s Flow?	240
19.6 Challenges to Hydroelectricity Production.....	242
19.7 Dealing with a Flowing River	245
19.8 Conclusion: The Limits of River ‘Management’	246
20 Visualising Nuclear Landscapes: Visual Simulation in the Licensing for Finnish Nuclear Facilities.....	249
<i>Hannah Strauss</i>	
20.1 Introduction	249
20.2 Licensing of Nuclear Facilities in Finland and the Use of Visual Simulations	250
20.3 Practical uses of Imaging Technologies in Environmental Planning.....	252
20.4 Expectations and Concerns towards the Use of Imaging Technologies	254
20.5 Perception of the Environment.....	256
20.6 Conclusions and Recommendations	259
21 Outsourcing Emissions: Clean Development Mechanism (CDM) as Ecological Modernisation.....	263
<i>Anup Sam Ninan</i>	
21.1 Introduction	263
21.2 Clean Development Mechanism and Ecological Modernisation.....	268
21.3 A Critical Review of CDM.....	273
21.4 Conclusion: CDM as Outsourcing Pollution	278

22 Sustaining Waste – Sociological Perspectives on Recycling a Hybrid Object	283
<i>Ingmar Lippert</i>	
Abbreviations	283
22.1 Introduction	283
22.2 Situating Recycling in Practice	285
22.3 A Kaleidoscope of Social Theory	286
22.4 Discussion: Limits to Manageability in a Hybrid Field	297
22.5 Concluding Thoughts	300
22.6 Postscript	301
 23 An Indicator-based Approach to Environmental and Resource Management in a Globalised World	 307
<i>Gerhard Wiegler</i>	
23.1 Introduction	307
23.2 Materials and Methods	308
23.3 The Bologna Process at BTU Cottbus	309
23.4 Change of Research Topics in ERM Books	311
24.5 Discussion and Conclusions	313
 Subject Index	 315

Implementing Environmental and Resource
Management

Schmidt, M.; Onyango, V.; Palekhov, D. (Eds.)

2011, XX, 317 p., Hardcover

ISBN: 978-3-540-77567-6