

Contents

Forewords

Rajendra K. Pachauri,
Director-General of TERI, chairman of the Intergovernmental Panel on
Climate Change (IPCC) V

Achim Steiner,
Executive Director of the United Nations Environment
Programme (UNEP) and Under-Secretary General of the
United Nations VII

Joy Ogwu,
Permanent Representative of the Federal Republic of Nigeria
to the United Nations in New York IX

Stavros Dimas,
European Commissioner for the Environment XI

Dedication XII

Acknowledgements XXI

Permissions and Credits XXIV

Prefaces 1

Facing Global Environment Change 3
Luc Gnacadja,
Executive Secretary, Secretariat,
United Nations Convention to Combat Desertification

Facing Global Environment Change and Disaster Risk Reduction 9
Salvano Briceño,
Director, Secretariat of the International Strategy for
Disaster Reduction (UN/ISDR)

Climate Change and Security: A Destablizing Fact of Life 11
Michael Zammit Cutajar,
Former Executive Secretary, UNFCCC
Honorary Ambassador for Climate Change, Malta

Facing and Coping with Globalization: How Ten Years of WTO have Created
an Agrarian Crisis in India 13
Vandana Shiva,
recipient of the Right Livelihood Award (Alternate Nobel Price) in 1993

Part I	Contextualization of Global Environmental Change	19
1	Introduction: Facing Global Environmental Change and Sectorialization of Security <i>Hans Günter Brauch</i>	21
2	The International System, Great Powers, and Environmental Change since 1900 <i>J.R. McNeill</i>	43
3	The Millennium Ecosystem Assessment: Securing Interactions between Ecosystems, Ecosystem Services and Human Well-being <i>Rik Leemans</i>	53
Part II	Securitization of Global Environmental Change	63
4	Securitizing Global Environmental Change <i>Hans Günter Brauch</i>	65
5	Natural Climatic Variations in the Holocene: Past Impacts on Cultural History, Human Welfare and Crisis <i>Wolf Dieter Blümel</i>	103
6	Climate Change Impacts on the Environment and Civilization in the Near East <i>Arie S. Issar and Mattanyah Zohar</i>	119
7	Human Security, Climate Change and Small Islands <i>Yannis N. Kinnas</i>	131
8	Redefining Sustainability: A Policy Tool for Environmental Security and Desertification <i>Rajeb Boulharouf and Douglas Pattie</i>	141
9	Societal Impacts of Desertification: Migration and Environmental Refugees? <i>Andreas Rechkemmer</i>	151
10	Desertification in Algeria: Policies and Measures for the Protection of Natural Resources <i>Ghazi Ali</i>	159
11	Securitizing Water <i>Úrsula Oswald Spring and Hans Günter Brauch</i>	175
12	Changing Population Size and Distribution as a Security Concern <i>Wolfgang Lutz</i>	203
13	Life on the Edge: Urban Social Vulnerability and Decentralized, Citizen-Based Disaster Risk Reduction in Four Large Cities of the Pacific Rim <i>Ben Wisner and Juha Uitto</i>	215
14	Policy Dimensions of Human Security and Vulnerability Challenges. The Case of Urban India <i>Isabelle Milbert</i>	233

Part III	Securitization of Extreme Natural and Societal Outcomes	243
15	Interactions between Conflict and Natural Hazards: Swords, Ploughshares, Earthquakes, Floods and Storms <i>Ben Wisner</i>	245
16	AIDS as a Human Security Challenge <i>Nana K. Poku and Bjorg Sandkjaer</i>	257
17	Conflict and HIV/AIDS: Quantitative Analysis <i>Sophia Benz</i>	269
18	Preparing for Low-Frequency, Extreme Natural Hazards: Contributing to Human Security by Enhancing 'Freedom from Hazard Impact' <i>Janos J. Bogardi, Jörn Birkmann, Niklas Gebert and Neysa J. Setiadi</i>	283
19	Environmental Refugees and Environmental Distress Migration as a Security Challenge for India and Bangladesh <i>Imtiaz Ahmed</i>	295
20	Environmental Scarcities and Civil Violence <i>Thomas Homer-Dixon, and Tom Deligiannis</i>	309
21	Linkages Between Sub-national and International Water Conflicts: The Eastern Nile Basin <i>Simon A Mason, Tobias Hagmann, Christine Bichsel, Eva Ludi and Yacob Arsano</i>	325
22	Extractive Industries and the Environmental Aspects of International Security <i>Saleem H. Ali</i>	335
Part IV	Energy Security for the 21st Century	343
23	Energy Security: Conceptualization of the International Energy Agency (IEA) <i>Klaus-Dietmar Jacoby</i>	345
24	Scenarios of Energy Demand and Supply until 2100: Implications for Energy Security <i>Leo Schrattenholzer</i>	355
25	Projections of Fossil Energy Reserves and Supply until 2050 (2100): Implications for Longer-term Energy Supply Security <i>Werner Zittel and Joerg Schindler</i>	365
26	Technical and Economic Potentials of Biomass until 2050: Regional Relevance for Energy Security <i>André P.C. Faaij</i>	379
27	Solar Energy on a Global Scale: Its Impact on Security <i>David Faiman</i>	395
28	Solar Energy as a Key for Power and Water in the Middle East and North Africa <i>Franz Trieb, Wolfram Krewitt, and Nadine May</i>	411
29	Energy Security in the Arab World <i>Mohammad Selim and Abdullah Sahar</i>	427

30	Turkey: Energy Security and Central Asia: The Politics and Economics of the So-called Great Game <i>Gareth M. Winrow</i>	437
31	Towards a Sustainable Energy System for Africa: An African Perspective on Energy Security <i>Nogoye Thiam</i>	445
32	Energy Security: Economic, Environmental, and Societal Opportunity for the North – Potential of Renewables to Avoid Conflicts? <i>Rolf Linkohr</i>	457
Part V	Food Security for the 21st Century	469
33	Food as a New Human and Livelihood Security Challenge <i>Úrsula Oswald Spring</i>	471
34	Governance of Food Security in the 21 st Century <i>M. A. Mohamed Salih</i>	501
35	A Research Strategy to Secure Energy, Water, and Food via Developing Sustainable Land and Water Management in Turkey <i>Selim Kapur, Burcak Kapur, Erhan Akca, Hari Eswaran and Mustafa Aydın</i>	509
Part VI	Livelihood and Health Security for the 21st Century	519
36	Sustainable Livelihood Security. Evolution and Application <i>Hans-Georg Bohle</i>	521
37	Global Health Security: The WHO Response to Outbreaks Past and Future <i>Guénaél Rodier and Mary Kay Kindhauser</i>	529
38	Health and Human Security in the 21 st Century <i>Jennifer Leaning</i>	541
39	AIDS – Challenge to Health Security in Africa: Politics in Africa and Case Study on Botswana <i>Fred Eboko and Tereza Nemeckova</i>	553
40	Health and Poverty as Challenges for Human Security: Two Case Studies on Northern Vietnam and Bangladesh <i>Isabel Fischer and Mohammad Musfequs Salehin</i>	563
Part VII	Water Security for the 21st Century	573
41	Global Trade: Balancing Existing and Future Regional Water Resource Deficits <i>Tony Allan</i>	575
42	Water Wars in India <i>Vandana Shiva</i>	589
43	Sustainability of Environmental Regimes: The Mekong River Commission <i>Bastien Affeltranger</i>	593

44	Water Scarcity and Political Wrangling: Security in the Euphrates and Tigris Basin <i>Mustafa Aydin and Fulya Ereker</i>	603
45	Water Resources in the Arab World: A Case Study on Jordan <i>Bassam Ossama Hayek</i>	615
46	'New Security Thinking' in Israeli-Palestinian Water Relations <i>Jan Selby</i>	623
47	Functional Water Cooperation in the Jordan River Basin: Spillover or Spillback for Political Security? <i>Anders Jägerskog</i>	633
48	Water and Food Security in the River Nile Basin: Perspectives of the Government and NGOs in Egypt <i>Emad Adly and Tarek Ahmed</i>	641
49	Water and Food Security in the Nile River Basin: Perspectives of Governments and NGOs of Upstream Countries <i>Patricia Kameri-Mbote and Kithure Kindiki</i>	651
50	Water and Security in Sub-Saharan Africa: Emerging Concepts and their Implications for Effective Water Resource Management in the Southern African Region <i>Peter Ashton and Anthony Turton</i>	661
51	Water Security in the Senegal River Basin: Water Cooperation and Water Conflicts <i>Martin Kipping</i>	675
52	The Centrality of Water Regime Formation for Water Security in West Africa: An Analysis of the Volta Basin <i>Maëlis Borghese</i>	685
53	Success and Failure in International River Basin Management – The Case of Southern Africa <i>Stefan Lindemann</i>	699
54	Can 'Integrated Water Resources Management' Silence Malthusian Concerns? The Case of Central Asia <i>Martin Kipping</i>	711
55	Environmental Security in Central Asia and the Caspian Region: Aral and Caspian Seas <i>Eva Rakel</i>	725
56	The Central Asian Water Regime as an Instrument for Crisis Prevention <i>Julia Wunderer</i>	739
57	Water Resource Management for Improving Environmental Security and Rural Livelihoods in the Irrigated Amu Darya Lowlands <i>Christopher Martius, Jochen Froebrich and Ernst-August Nuppenau</i>	749
58	Water Security in Times of Armed Conflicts <i>Mara Tignino</i>	763

Part VIII	Environmental Security Concepts and Debates	779
59	Environmental Security Concepts Revisited During the First Three Phases (1983-2006) <i>Simon Dalby, Hans Günter Brauch, Úrsula Oswald Spring</i>	781
60	Environmental Security: Academic and Policy Debates in North America <i>Richard A. Matthew and Bryan McDonald</i>	791
61	The Debate on Ecological Security in Russia, Belarus and Ukraine <i>Alexander Sergunin</i>	803
62	Linking Knowledge Systems for Socio-ecological Security <i>P.S. Ramakrishnan</i>	817
63	Environmental Security in Northeast Asia <i>Miranda A. Schreurs</i>	829
64	Environmental Security in the Arab World <i>Mohammad El-Sayed Selim</i>	843
65	In the Name of Security: In the Name of Peace – Environmental Schizophrenia and the Security Discourse in Israel / Palestine <i>David Newman</i>	855
66	Security and Environment and the Israel-Palestine Conflict <i>Robin Twite</i>	865
67	Conceptualization and Debate on Environmental and Human Security in Palestine <i>Mohammed S. Dajani Daoudi</i>	873
68	Environmental Scarcity, Insecurity and Conflict: The Cases of Uganda, Rwanda, Ethiopia and Burundi <i>Mersie Ejigu</i>	885
69	Environmental Security in Sub-Sahara Africa: Global and Regional Environmental Security Concepts and Debates Revisited <i>Sam Moyo</i>	895
70	The Brazilian Amazon in an Environmental Security and Social Conflict Framework <i>Alexander López</i>	915
71	Politics of Environment in the Caucasus Conflict Zone: From Nationalizing Politics to Conflict Resolution <i>Vicken Cheterian</i>	925
72	Environmental Security in the Asia-Pacific Region: Contrasting Problems, Places, and Prospects <i>Jon Barnett</i>	939
73	Security at the Poles: The Arctic and Antarctic <i>Gunhild Hoogensen</i>	951

Part IX	Human and Gender Security Concepts and Debates	961
74	Human Security Concepts in Policy and Science <i>Hans Günter Brauch</i>	965
75	The Human Security Network: A Global North-South Coalition <i>Claudia F. Fuentes Julio and Hans Günter Brauch</i>	991
76	Theoretical Perspective on Human Security: A South Asian View <i>A. K. M. Abdus Sabur</i>	1003
77	Horizontal and Vertical Extension of International Security: A Human Security Approach <i>Sascha Werthes and Tobias Debiel</i>	1013
78	Human Security in the Arab World: A Perspective from the Maghreb <i>Bechir Chourou</i>	1021
79	Human Security Concepts, Approaches and Debates in Southeast Asia <i>Zarina Othman</i>	1037
80	Human Security in Sub-Saharan Africa <i>Nana K. Poku and Bjorg Sandkjaer</i>	1049
81	Human Security in Central America <i>Philippe De Lombaerde and Matthew Norton</i>	1063
82	Human Security: a South American Perspective <i>Francisco Rojas Aravena</i>	1077
83	Human Security in North America: A Canadian Perspective <i>David R. Black and Larry A. Swatuk</i>	1087
84	Human Security Initiatives of Japan <i>Hideaki Shinoda</i>	1097
85	Human Security: International Discourses and Local Reality – Case of Mali <i>Max Schott</i>	1105
86	Enhancing Human Rights – A Contribution to Human Security <i>Dieter Senghaas</i>	1115
87	Natural Disasters, Vulnerability and Human Security <i>Fabien Nathan</i>	1121
88	Environment as an Element of Human Security in Southeast Asia: Case Study on the Thai Tsunami <i>Surichai Wun’Gaeo</i>	1131
89	The Impossibility of Securitizing Gender vis à vis ‘Engendering’ Security <i>Serena Eréndira Serrano Oswald</i>	1143
90	A HUGE Gender Security Approach: Towards Human, Gender, and Environmental Security <i>Úrsula Oswald Spring</i>	1157
91	Human Security and the Governmentality of Neo-liberal Mobility: A Feminist Perspective <i>Thanh-Dam Truong</i>	1183

92	Gender Security in South East Asia and Trafficking of Children for Sexual Exploitation in Central America: HUGE Security Challenges <i>Mary Soledad L. Perpiñan, María Eugenia Villarreal and Úrsula Oswald Spring</i>	1191
93	Do Disasters Discriminate? A Human Security Analysis of the impact of the Tsunami in India, Sri Lanka and of the Kashmir Earthquake in Pakistan <i>Madhavi Malalgoda Ariyabandu and Dilrukshi Fonseka</i>	1215
94	Failed Narco-state or a Human Security Failure? Ethical and Methodological Ruptures with a Traditional Read of the Afghan Quagmire <i>Shahrbanou Tadjbakhsh</i>	1227
95	Relevance of Human and Environmental Security Concepts for the Military Services: A Perspective of a Former Chief of Staff <i>Joseph G. Singh</i>	1245
96	Towards a Human Security-Based Early Warning and Response System <i>Albrecht Schnabel and Heinz Kruppenacher</i>	1253
Part X	Conclusions: From Knowledge to Action and Policy Outlook	1265
97	Methods and Techniques of Remote Sensing to Contribute to Security in Tropical Rain Forests <i>Dirk H. Hoekman</i>	1267
98	Linking Anthropocene, HUGE and HESP: Fourth Phase of Environmental Security Research <i>Úrsula Oswald Spring, Hans Günter Brauch and Simon Dalby</i>	1277
99	Towards Sustainable Peace for the 21 st Century <i>Hans Günter Brauch and Úrsula Oswald Spring</i>	1295
100	Summary and Results: Facing Global Environmental Change and Sectorialization of Security <i>Hans Günter Brauch</i>	1311
	Abbreviations	1333
	Bibliography	1347
	Biographies of Contributors	1503
	Index	1543