

Natural Resource Management in Transition 2

Michael Schmidt
Daniele Giovannucci
Dmitry Palekhov
Berthold Hansmann *Editors*

Sustainable Global Value Chains

 Springer

Natural Resource Management in Transition 2

Series Editors

Michael Schmidt, Department of Environmental Planning, Brandenburg University of Technology Cottbus-Senftenberg (BTU), Cottbus, Germany

Berthold Hansmann, Division Climate Change, Rural Development, Infrastructure, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Eschborn, Germany

Dmitry Palekhov, Department of Environmental Planning, Brandenburg University of Technology Cottbus-Senftenberg (BTU), Cottbus, Germany

More information about this series at <http://www.springer.com/series/13274>

Michael Schmidt • Daniele Giovannucci •
Dmitry Palekhov • Berthold Hansmann
Editors

Sustainable Global Value Chains

With Contribution by Robert Atkinson

 Springer

Editors

Michael Schmidt
Department of Environmental Planning
Brandenburg University of Technology
Cottbus-Senftenberg (BTU)
Cottbus, Germany

Daniele Giovannucci
The Committee on Sustainability Assessment
(COSA)
Philadelphia, PA, USA

Dmitry Palekhov
Department of Environmental Planning
Brandenburg University of Technology
Cottbus-Senftenberg (BTU)
Cottbus, Germany

Berthold Hansmann
Division Climate Change, Rural Development,
Infrastructure
Deutsche Gesellschaft für Internationale
Zusammenarbeit (GIZ) GmbH
Eschborn, Germany

ISSN 2198-9702

ISSN 2198-9710 (electronic)

Natural Resource Management in Transition

ISBN 978-3-319-14876-2

ISBN 978-3-319-14877-9 (eBook)

<https://doi.org/10.1007/978-3-319-14877-9>

© Springer Nature Switzerland AG 2019

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors, and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Switzerland AG.
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Foreword by Leonard Mizzi

Sustainability sits at the heart of the European Union (EU) policy priorities, and its three pillars (social, environmental and economic) are reflected in both its internal and external policies. Sustainability is no longer considered a luxury; it establishes the foundations for a society that meets its needs, without compromising the ability of the next generations to meet their needs. Doing so will require breaking the link between economic growth and environmental degradation. This is the task the world set itself when it adopted the 2030 Agenda for Sustainable Development in 2015, including the Sustainable Development Goals (SDGs). The sustainable management of natural resources is a vital aspect of these SDGs—indeed 12 of the 17 Goals are directly linked to it. In particular, in its external cooperation policies, the EU actively contributes to the eradication of poverty, which is mainly addressed in SDG1, through sustainable development measures. And we are well aware of the close link between improved natural resources management and poverty reduction.

Sustainability is essential to both businesses and consumers, and we are reinforcing our work with governments to ensure that sustainability considerations are reflected in EU cooperation programmes and in local governance systems. Both consumers and investors are increasingly keen to promote sustainability in their consumption and production patterns; it is clear that governments have a role in helping them reach sustainable decisions through the provision of information and analysis regarding sustainability.

Voluntary standards represent an important tool in our toolbox to support such sustainable decision-making. These non-governmental schemes respond to the demand for sustainably produced products and also seek to create a supply of such products, in addition to raising greater awareness of sustainability issues. Among a broad spectrum of sustainability-related subjects, this publication contributes to a better understanding of how voluntary standards can contribute to generally more

sustainable global value chains. I warmly recommend it as a reference document for interested parties.

European Commission, Directorate-
General (DG) for International
Cooperation and Development
(DEVCO), Head of Unit for Rural
Development, Food Security and
Nutrition

Leonard Mizzi

Foreword by Kevin J. Dooley

The consumer economy provides innumerable benefits and comforts of life to society, from meeting our food and health needs to providing the objects we interact with daily. Almost all visions of a future, more sustainable society, assume that we will still have a consumption-based, albeit more circular, economy. As an additional 2–3 billion people achieve middle-class status in the next decades, it is essential that the negative environmental and social impacts of producing consumer goods be addressed. The majority of global greenhouse gas emissions, water use, deforestation and labour violations can be linked to the consumer economy. Furthermore, these impacts tend to be the greatest at the ‘ends’ of the value chain: at the beginning of the value chain where agricultural or material extraction activities occur, and at the end of the value chain where product meets end-of-life and must be reused or disposed of. At The Sustainability Consortium, we believe that market-based mechanisms are the most efficient and effective way to induce the adoption of sustainable practices in supply chains.

This book, volume 2 in the Springer book series ‘Natural Resource Management in Transition’, contains an excellent collection of chapters authored by some of the leading organisations and individuals working on improving supply and value chain sustainability. It both captures the state of current practice and sets forth research and policy challenges. Increasing the effectiveness of global supply chains and improving circularity touch upon many diverse types of stakeholders and disciplines; these are represented in the book’s coverage of political systems, private sector initiatives, the state of practice and cases studies of progress, and an overview of emerging issues.

Distinguished Professor of Supply
Chain Management, Arizona State
University

Kevin J. Dooley

Chief Scientist, The Sustainability
Consortium

Foreword by Sarah Schaefer

Until recently, the world lacked a shared, international strategy for advancing sustainable development and tackling the seemingly insurmountable, complex challenge of climate change. Yet in 2015, we collectively addressed these challenges. The Paris Climate Agreement and Sustainable Development Goals (SDGs) provide us with an ambitious and bold framework to create a more sustainable, equitable and inclusive world by 2030, equipping us to overcome the hurdles we will face.

Yet still, an issue essential to achieving both the Paris Climate Agreement and the SDGs remains side-lined from the global agenda, written-off as too complicated to solve: our food and land-use systems need urgent attention. Today, the way we produce our food and use our land is not fit for purpose. This drives massive environmental destruction, accounting for around 25% of greenhouse gas emissions and causes devastating natural capital losses (including loss of biodiversity, soil erosion and reduced fertility).

The disconnect between production and consumption has fuelled the double burden of persistent malnutrition and rising obesity, with 800 million people going hungry and over 2 billion overweight or obese. Meanwhile, 500 million smallholder farmers live under the poverty line. As the producers, manufacturers and retailers of most of the world's food, business has therefore a responsibility to help drive the food system transformation. This is not just because it is the right thing to do. Business stands to gain an economic benefit of at least US\$12 trillion each year by 2030 if they align their strategies to the SDGs—of which more than US\$2.3 trillion are directly linked to food and land-use system transformation.

But business cannot do it alone—we need unprecedented levels of collaboration and partners to fulfil our joint vision. This book, volume 2 in the Springer book series 'Natural Resource Management in Transition', therefore contains a timely collection of chapters authored by some of the leading organisations and individuals working on improving supply and value chain sustainability, and it provides a valuable overview of existing initiatives to identify the path ahead.

Global Policy Director, Unilever

Sarah Schaefer

Contents

1	The Editors Review of Evidence and Perspectives on Sustainable Global Value Chains	1
	Daniele Giovannucci, Berthold Hansmann, Dmitry Palekhov, and Michael Schmidt	
1.1	Introduction	1
1.2	Political Trends	3
1.3	Private Sector Initiatives	4
1.4	How the Monitoring and Evaluation of Sustainability Has Evolved	7
1.5	Outlook and Emerging Issues: Perspectives from Select Initiatives	10
1.6	Conclusions	13
	References	13
 Part I New Trends in Sustainability Agenda: Political Arena		
2	Rio+20 and Beyond: A New Era of Sustainable Development, Partnership and Interdependence	19
	Chantal Line Carpentier and Isabel Garza Rodríguez	
2.1	The 2030 Agenda: A New Era of Development	19
2.2	How Did the UN Develop Such an Ambitious Universal Agenda?	21
2.3	Business as Usual Is Not an Option	23
2.4	Implementing the SDGs	25
2.5	Trade as an Enabler of Sustainable Development	30
2.6	Implication for Global Value Chains	31
2.7	Conclusions and Recommendations	36
	Annex: Agenda 2030: Specific Targets for the Private and Financial Sector	38
	References	40

3 The Grand Vision of G7 in Elmau: Quo Vadis, Sustainability? 43
 Katharina Serrano

3.1 Introduction 43

3.2 A New Sustainability Tool: Global Value Chains 45

3.3 Collective Sectoral Sustainability Governance: National and Global Multi-Stakeholder Initiatives (MSIs) 46

3.4 Looking Back: G7 Approaches to Sustainability 50

3.5 2015 G7 Summit in Germany: A New Approach to Sustainability 52

3.6 Where to After Elmau? 58

References 59

4 From Stockholm to Paris: Four Decades of Sustainability in International Law 63
 Terence Onang Egute, Eike Albrecht, and Kelvin Awanaya Egute

4.1 Introduction 63

4.2 From Stockholm to New York: Sustainable Development in International Soft Law 65

4.3 Sustainable Development in International Hard Law 69

4.4 Sustainable Development in Decisions of International Disputes Settlement Bodies 76

4.5 Conclusions and Recommendations 80

References 81

5 European Union Policy for Sustainable Development 85
 Eva Leptien, Ganna Mochalova, and Eike Albrecht

5.1 Introduction 85

5.2 Sustainable Development in the European Union 87

5.3 Contribution to Sustainable Global Value Chains 99

5.4 Conclusions 102

References 103

6 Sustainability in Trade and Investment Agreements 107
 Evita Schmieg

6.1 Introduction 107

6.2 The Demands of the UN’s Sustainable Development Goals for Changes in Trade Policies 108

6.3 Sustainability Issues in Free Trade Agreements 111

6.4 Conclusions and Recommendations 117

References 120

7 Capacity Building to Promote Sustainable Value Chains: The ValueLinks 2.0 Methodology 123
 Andreas Springer-Heinze

7.1 Introduction 123

7.2	Significance of the Value Chain Concept for Sustainable Development	124
7.3	ValueLinks 2.0: A Methodology for Sustainable Value Chain Development	130
7.4	Sustainability Standards and Value Chain Development	132
7.5	Conclusions and Recommendations	133
	References	134
8	Towards Mandatory Sustainability: Recent Lessons from Germany	137
	Robert Atkinson	
8.1	Introduction	137
8.2	Clarification of Terms	138
8.3	Non-Mandatory Sustainability: Potential Advantages of Implementation	139
8.4	Legislative and Political Tools for Promoting Sustainability	143
8.5	Outlook	150
8.6	Conclusions	152
	References	153
9	An Introduction to Sustainability in Australia's Energy Policies	157
	Aleksandar Damjanovski	
9.1	Introduction	157
9.2	Energy and Sustainability	158
9.3	Policies Pursuing Sustainable Energy	163
9.4	Key Learnings	173
9.5	Conclusions and Recommendations	174
	References	175
10	Governmentally Controlled Supply Chains in Areas Facing Food Security Challenges: The Case of <i>Baladi</i> Bread Supply Chain in Egypt and the Policy Transition After the 2011 Uprising	179
	Sarkis Nehme	
10.1	Introduction	179
10.2	Policy Backgrounds of Food Security and Food Sustainability	180
10.3	Food Security in the MENA Region and the Importance of Bread Supply Chain	182
10.4	Food Security in Egypt and the Role of Wheat	183
10.5	The Supply Chain of Subsidised <i>Baladi</i> Bread	184
10.6	Challenges Facing the Security of <i>Baladi</i> Bread Supply Chain	186
10.7	Governmental Policy and Interventions	187
10.8	Lessons Learned	189
10.9	Conclusions and Recommendations	190
	References	191

11	Tools of Transformation: From Small Scale Progress to Structural Change	193
	Guus ter Haar and Lucas Simons	
11.1	Introduction	193
11.2	Our Global Food System: The Limits to Change	194
11.3	A Logical Outcome of an Unsustainable System	195
11.4	Pyramids and Diamonds: The Shape of a Sector	196
11.5	The Rules of the Game: What Forces Shape a Sector?	200
11.6	The Sustainability of Standards	202
11.7	Unlocking Progress with Six Key Elements	203
11.8	Envisioning a Sustainable Future	204
	References	206
Part II New Trends in Sustainability Agenda: Private Sector Initiatives		
12	Sustainability Governance of Global Supply Chains: A Systematic Literature Review with Particular Reference to Private Regulation	211
	Marina Jentsch and Klaus Fischer	
12.1	Introduction	211
12.2	Research Design and Overview of Results	212
12.3	Governance Instrument ‘Private Regulation’	217
12.4	Conclusions and Recommendations	222
	References	224
13	Chain of Custody and Transparency in Global Supply Chains	227
	Alexander Ellebrecht	
13.1	Introduction	227
13.2	Chain of Custody Models: Successful Traceability Via Adaptability	228
13.3	Transparency: A Core Supply Chain Challenge	231
13.4	Shared Ledger Technologies Drive Change: Private Federated Ledgers (PFL) and Blockchains	233
13.5	How Does Transparency Affect Business: Example of Tony’s Chocolonely	235
13.6	Conclusions and Recommendations	236
	References	237
14	Clarity in Diversity: How the Sustainability Standards Comparison Tool and the Global Sustainable Seafood Initiative Provide Orientation	239
	Friederike Sorg, Jens Kahle, Niklas Wehner, Max Mangold, and Silke Peters	
14.1	Introduction	239
14.2	Sustainability Standards Comparison Tool: Orientation in the Landscape of Social and Environmental Labels	241

14.3	The Global Sustainable Seafood Initiative	252
14.4	Conclusions and Recommendations	261
	References	262
15	Future Role of Voluntary Sustainability Standards: Towards Generation 3.0?	265
	Mathieu Lamolle, Sandra Cabrera de Leicht, Regina Taimasova, and Aimee Russillo	
15.1	Introduction	265
15.2	Voluntary Sustainability Standards: Evolution and Recent Trends	267
15.3	What Has Been Achieved So Far by VSS?	273
15.4	Traditional Models for Assurance: An Old Story?	275
15.5	Industry Platforms: Leading the Way on Sectoral Transformation?	278
15.6	Towards the Generation 3.0 of VSS	282
15.7	Conclusions and Recommendations	284
	References	284
 Part III Monitoring and Evaluating Progress Towards Sustainability		
16	Measuring Progress Towards Sustainability: A View of the Main Approaches to Evaluation	289
	Keith Child	
16.1	Introduction	289
16.2	Establishing the Evaluation Framework	290
16.3	Using Programme Theory for Evaluation	292
16.4	Navigating Different Types of Evaluation Approaches	293
16.5	Rise of Experimental and Quasi Experimental Approaches	293
16.6	Observational Approaches	295
16.7	Limitations and the Need to Innovate	299
16.8	Reducing Evaluation Costs	302
16.9	Concluding Remarks	302
	References	303
17	Transformational Change: The Challenge of a Brave New World	305
	Jyotsna Puri	
17.1	Objective and Introduction	305
17.2	What Are Organisations Doing?	311
17.3	A Discussion of Agency Experiences	312
17.4	Discussion	320
17.5	Conclusions: Implications for Organisations	322
	References	323

18	Impact Assessment of Commodity Standards: Pathways for Sustainability and Inclusiveness	327
	Ruerd Ruben	
18.1	Introduction	327
18.2	Impact of Commodity Standards in Value Chains: Objectives, Pathways and Interfaces	329
18.3	Impact Assessment of Value Chain Performance	335
18.4	Conclusions and Outlook: Beyond Impact	341
	References	342
19	Performance Monitoring: An Agile New Tool for Facilitating Sustainability in Value Chains	347
	Jessica Mullan, Heather Esper, and Daniele Giovannucci	
19.1	Introduction	347
19.2	Value and Purpose of Performance Monitoring (PM)	348
19.3	The Tool and How It Works	349
19.4	Case Studies	355
19.5	PM Limitations	358
19.6	Conclusion	358
	References	359
20	Evaluating the Potential of a Green Economy in Tunisia: A System Dynamics Modelling Approach for the Solid Waste Management Sector	361
	Salma Halioui, Michelle Heese, and Michael Schmidt	
20.1	Introduction	361
20.2	Green Economy: Concept, Principles and Philosophy	362
20.3	Green Economy in the Tunisian Context	363
20.4	Modelling the Green Economy	364
20.5	The Thresholds 21 Modelling Approach in the Context of Greening the Solid Waste Sector in Tunisia	366
20.6	Solid Waste Management as a Key Sector of the Green Economy in Tunisia	366
20.7	Modelling the Solid Waste Sector in the Context of the Green Economy in Tunisia	367
20.8	Conclusion	374
	References	375
Part IV Sector Transformation Towards Sustainability: Selected Initiatives		
21	Designing Progress Towards Sustainable Sectors: The Four Phases of Market Transformation	381
	Guus ter Haar and Lucas Simons	
21.1	Introduction: Structural Change in our Food System	381
21.2	The Four Phases of Sustainability	382

21.3	Sustainable Evolution: Mapping the Transitions from One Phase to the Next	386
21.4	Looking Beyond the S-Curve	394
21.5	Conclusion	395
	References	395
22	What's Next for Transforming the Palm Oil Sector: More of the Same or Better Embedded?	397
	Johan Verburg	
22.1	Introduction: "Welcome to the Hotel California"	397
22.2	What Makes Palm Oil Problematic and for Whom?	398
22.3	From Crisis Towards Structural Change	400
22.4	Strengths and Weaknesses of Palm Oil Market Transformations So Far	403
22.5	Where Transformation Should Go for Palm Oil Communities	410
22.6	Call to Action	413
	References	414
23	The Global Coffee Platform: An Innovative Approach to the Coffee Sector Transformation	417
	Friederike Martin, Lars Kahnert, Annette Pensel, and Jishoy Vithayathil	
23.1	Introduction	417
23.2	The Coffee Market	418
23.3	The Establishment of the Multi-Stakeholder Platform: 4C Association	421
23.4	Sector Transformation	423
23.5	Conclusion	431
	References	431
24	Cocoa Certification in West Africa: The Need for Change	435
	Enrique Uribe-Leitz and François Ruf	
24.1	Introduction	435
24.2	Cocoa Certification Schemes	436
24.3	Challenging Certification Criteria	438
24.4	Conclusions and Recommendations	456
	References	458
25	Sustainability in the Banana Sector: Development and Success Factors of the German Action Alliance for Sustainable Bananas	463
	Alexandra Kessler and Christoph Hermann	
25.1	Introduction	463
25.2	The Global Banana Sector	464
25.3	Existing Initiatives	468
25.4	Multi-Stakeholder-Approach of the Action Alliance for Sustainable Bananas	471

25.5	Conclusions and Recommendations	477
	References	477
26	Forest Stewardship Council: Transforming the Global Forestry Sector	481
	Amparo Arellano Gil, Thomas Colonna, John Hontelez, Marion Karmann, and Anakarina Pérez Oropeza	
26.1	Introduction	481
26.2	Introduction to FSC Certification	481
26.3	Case Studies from Portugal as Examples of Sector Transformation	486
26.4	Outlook	493
	References	495
27	Recent Experiences from the Natural Rubber Industry and Its Movement Towards Sustainability	499
	Edward Millard	
27.1	Introduction	499
27.2	The Natural Rubber Industry	500
27.3	Social and Environmental Issues	506
27.4	Movement Towards Sector Transformation	511
27.5	Conclusion	517
	References	518
28	Responsible Mining: Challenges, Perspectives and Approaches	521
	Dmitry Palekhov and Ludmila Palekhova	
28.1	Introduction	521
28.2	Understanding the Concept of Responsible Mining	523
28.3	Overview of the Extractive Industries Transparency Initiative (EITI)	528
28.4	Prospects for the Implementation of the IRMA Standard in Countries with Economies in Transition	536
28.5	Conclusions and Recommendations	538
	References	540
29	Responsible Gold Mining at the Artisanal and Small-Scale Level: A Case Study of Ghana	545
	Kenneth Bedu-Addo, Dmitry Palekhov, David J. Smyth, and Michael Schmidt	
29.1	Introduction	545
29.2	Historical Perspective and Current Challenges of Ghana's Mining Industry	547
29.3	Voluntary Standards for Responsible Gold Mining	548
29.4	The AKOBEN Programme as an Initiative Towards Transforming the Artisanal and Small-Scale Gold Mining Sector in Ghana	550
29.5	Impact Analysis of the Fairtrade Gold Standard Programme in Ghana	552

29.6	Conclusions and Recommendations	558
	References	559
30	Industry Initiatives Towards Environmental Sustainability in the Automobile Value Chains	565
	Pia Dewitz	
30.1	Introduction	565
30.2	Environmental Issues Along Global Supply Chains	567
30.3	Major Industrial Environmental Initiatives	568
30.4	Comparison of Initiatives and Discussion of Drivers	575
30.5	Potential for Value Chain Transformation	578
30.6	Conclusions and Recommendations	580
	References	581
31	Tourism and Sustainability: Transforming Global Value Chains to Networks	585
	Keith Bosak and Stephen F. McCool	
31.1	Introduction	585
31.2	The Tourism System: Not a Chain But a Multi-Dimensional Network	586
31.3	Systems Thinking in Sustainable Tourism	591
31.4	Looking to the Future	593
	References	594
Part V Outlook and Emerging Issues		
32	localg.a.p.: International Know-How Applied at Regional Level . . .	599
	Enrique Uribe-Leitz, Elmé Coetzer-Boersma, and Christi Venter	
32.1	Introduction	599
32.2	Background on GLOBALG.A.P.	601
32.3	localg.a.p.	604
32.4	Principles of a localg.a.p. Programme	606
32.5	Once localg.a.p. Is Implemented, What Is Next?	614
32.6	Case Study: Freshmark localg.a.p., South Africa	614
32.7	Conclusion and Recommendations	616
	References	618
33	<i>Cui bono</i>: Who Stands to Gain? Certification for Smallholder Tree-Farmers in Southeast Asia	621
	Aidan C. Flanagan, Peter R. Stevens, and Stephen J. Midgley	
33.1	Introduction	621
33.2	The Main Issues with Certification	623
33.3	Benefits, Costs and Risks of Certification for Smallholder Tree-Farmers	627
33.4	Conclusions and Recommendations	632
	References	635

34	Group Certification: Market Access for Smallholder Agriculture . . .	639
	Mildred Steidle and Gerald A. Herrmann	
34.1	Introduction	639
34.2	Background and Dissemination	640
34.3	Terminologies and Interrelations	642
34.4	Emergence and History	646
34.5	Common Criteria and Implementation	648
34.6	Observations and Challenges	651
34.7	Addressing Concerns and Challenges	652
34.8	Conclusions and Recommendations	653
	Annex: Picture Credits for Figs. 34.1 and 34.2	654
	References	655
35	Towards a Living Income Within Agricultural Value Chains	657
	Sophie Grunze, Kristin Komives, Don Seville, Stephanie Daniels, and Eberhard Krain	
35.1	Introduction	657
35.2	Towards a Living Income Benchmark	658
35.3	Making Use of the Living Income Concept	661
35.4	What Challenges Remain?	668
35.5	Conclusions and Recommendations	669
	References	669
36	Potential for Joint Public and Private Initiatives to Eliminate Deforestation from Global Supply Chains	673
	Franziska Rau	
36.1	Introduction	673
36.2	Drivers of Deforestation and International Trade	674
36.3	International Initiatives to Eliminate Deforestation from Global Supply Chains	675
36.4	Chances and Challenges for the Implementation	680
36.5	Potential for Joint Public and Private Initiatives to Combat Deforestation	681
36.6	Conclusions and Recommendations	685
	References	686
37	Planned Obsolescence: A Case Under Torts Law as Intentional Damage Contrary to Public Policy (Art. 826 German Civil Code) . .	689
	Eike Albrecht	
37.1	Introduction	689
37.2	Obsolescence	691
37.3	Short Overview on Law Related Activities Against Obsolescence and for the Increase of Resource Efficiency of Products	694
37.4	Damage Claims in Cases of Planned Obsolescence	698
37.5	Conclusions and Recommendations	704
	References	705

38 A Paradigm Shift in University Education Towards Sustainable Development 709
Dmitry Palekhov, Ludmila Palekhova, Michael Schmidt,
and Berthold Hansmann

38.1 Introduction 709

38.2 Historical Evolution of Higher Education for Sustainable
Development 711

38.3 Challenges Relating to Education for Sustainable Development
in Ukrainian Technical Universities 716

38.4 Conclusions and Recommendations: Leadership Strategy for
Sustainability 723

References 725

Chapter 1

The Editors Review of Evidence and Perspectives on Sustainable Global Value Chains



Lead chapter synthesising key issues and main findings of the 37 chapters in this volume

Daniele Giovannucci, Berthold Hansmann, Dmitry Palekhov, and Michael Schmidt

1.1 Introduction

Value chains are a vital part of how our world operates, yet we are only beginning to understand how to make them sustainable. When the World Commission on Environment and Development published *Our Common Future* in 1987 (also known as the Brundtland Report; see WCED 1987) it represented a turning point for the understanding of sustainability and sustainable development. The fundamental importance of the topic—and the importance of the private sector in achieving it—has since been increasingly signalled by thousands of scientists and policymakers including leading thinkers such as the Nobel Laureate economist Nicholas Stern (2007) who addressed the urgency of taking action to reduce climate change whose cost to all of us has been estimated as equivalent to losing at least 5% of gross domestic product (GDP) globally.

Most institutions take the topic very seriously. The United Nations 2030 Agenda (UN 2015) and its leadership in crafting the Sustainable Development Goals (SDGs) will help to guide the transformation towards global sustainable development

D. Giovannucci (✉)
The Committee on Sustainability Assessment (COESA), Philadelphia, PA, USA
e-mail: DG@theCOESA.org

B. Hansmann
Division Climate Change, Rural Development, Infrastructure, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Eschborn, Germany

D. Palekhov · M. Schmidt
Department of Environmental Planning, Brandenburg University of Technology
Cottbus-Senftenberg (BTU), Cottbus, Germany

(see Chap. 2 for more on SDGs). In the intrinsically complex world of sustainability, there is a clear area of consensus: that to achieve sustainability, multidimensionality must be addressed and so must the critical role of the private sector. We recognise that in order to succeed, we need to take into account diverse economic, environmental, and social (including governance) aspects that are affected by the operation of global value chains. We are surmounting prior simplistic or short-sighted perspectives that led to efforts focused only on income, or productivity, or environmental protection.

What is left, and it is a key pillar to address, is to undertake the tasks necessary to learn what works and to transform our businesses and economies. That, however, is sometimes easier said than done. The textbook that this chapter introduces, addresses the crux of that challenge by presenting a broad array of options for understanding and managing the complexity of sustainability initiatives that affect value chains and trade. We have selected 38 chapters from among a broad array of experts that address the many ways to undertake this transformation and transition toward sustainable value chains. We define value chains as *the full range of people, inputs, and activities required to bring a product or service from conception and production through transformation and transportation to consumers and final disposal* in alignment with Kaplinsky and Morris (2001) and others.

With that in mind, this chapter provides an overview of the key issues necessary to both understand and drive sustainable global value chains, as well as a brief synopsis of the main themes of the book. With major trends moving clearly toward public-private integration of sustainability initiatives, we look at the key issues and the implications of that. The chapter begins with sections assessing new trends in the sustainability agenda, from both political (Sect. 1.2) and private sector perspectives (Sect. 1.3). This includes the diverse perspectives of governance from SDGs to regulation to private standards. We then discuss in Sect. 1.4 the emergent and critical value of the availability and understanding of innovative and tested approaches to monitoring and evaluating so as to more effectively manage the progress towards sustainability. Selected initiatives are reviewed in Sect. 1.5 to offer concrete outlooks into some of the major approaches by sector. Here we examine some future outlooks from several authors who argue that much has changed in the last decade and there are an array of new tools at hand that can functionally support the emerging value chain transformations towards greater inclusiveness, clarity, and sustainability. The chapter ends with conclusions in Sect. 1.6.

The sound approaches presented by more than 50 authors throughout this text help to make informed choices towards a common sustainability agenda. Some also illustrate how to secure outcomes that represent positive returns on investment (ROI), which is useful for both public and private concerns—noting that the ‘returns’ are not necessarily financial or even monetisable. In accord with multi-dimensionality and our abilities for more sophisticated measurement, we can and should consider diverse values that include social and resource capital in addition to financial or economic benefits.

1.2 Political Trends

Simply put, the fundamental role of government and policy is to help ensure that we have the basic conditions to be safe and happy. Sustainability is clearly within this purview of government but, interestingly, as we have become increasingly aware of the intrinsic non-sustainability of our global and local systems, many of the most visible sustainability initiatives have primarily been a voluntary concept at least in recent decades. Even many public efforts or accords remain voluntary and spottily enforced by governments. The private sector, after decades of little or even negative engagement, is emerging more strongly as a voice and catalyst for sustainability—or at least is much more active in sustainability activities and claims.

This shift, even at its early stages is certainly welcome, but there are many reasonable questions about whether real sustainability could be widely achieved via the efforts of private firms. It is more likely that the private sector will struggle to achieve meaningful change because of some of the intrinsic contradictions embedded in the dominant consumerist culture that exists across key parts of the planet. Corporate marketing departments tell us to consume more and to live for our own frequent and even immediate gratification while the modestly funded CSR side of the business conducts some projects or insists on suppliers checking off generic compliance checklists.

It is becoming clear that the private sector, even if it may have some incentives, does not have the adequate mechanisms or the legitimacy to achieve the necessary common good of sustainability. Our sustainability is likely to require some restraint and a common agreement about many common goods such as the oceans, air pollution, and water. Clearly, public policy will have to take a leadership role. This includes its ability to guide private efforts, such as through Trade Agreements, appropriately. Evita Schmiegl illustrates in Chap. 6 how sustainability issues—from labour to environment—are increasingly integrated into trade agreements. It is a critical function of governments to establish such necessary framework conditions and not to expect that consumer or private sector efforts will be sufficient.

That is not to imply that there are not many useful private initiatives, rather it is an admission that they are simply not sufficient. For example, the International Organization for Standardization's Guidance on Social Responsibility (ISO 26000:2010) focuses its operationalisation on performance results and improvement and not on concrete or mandatory requirements. Similarly, other wide-ranging systems working in the private sector realm including the Global Compact, the Global Reporting Initiative (GRI) and many sectoral or national platforms such as the German Sustainability Codex all are strictly voluntary standards and revolve fundamentally around the weakest mechanism: self-reporting. While this is perhaps better than no reporting, one wonders how many prospective employers would hire students who graduated from schools that had only student self-reporting to gauge their academic accomplishments.

However, conditions to advance sustainability are not ideal in the public sector either. A lack of clarity and agreement has led to more than a few stalled and ineffective policies. The slow move toward solid metrics and results-based science slows progress and investment on many fronts even as swiftness seems a priority, especially for issues related to climate change and resource use. Our understanding and our approach must necessarily be as holistic as it is pragmatic; as Guus ter Haar and Lucas Simons note in their work (see Chap. 11), we need to not just tinker at improving the edges but to consider wide-scale structural change. UNCTAD's Chantal Line Carpentier and Isabel Garza Rodríguez illuminate in Chap. 2 how the evolution of the global agenda, including the new 2030 Agenda for Sustainable Development and the SDGs, now has powerful implications for how the private sector must be effectively engaged in tangible ways. The private sector clearly has a vital role to play and whether its roles are more circumscribed by policy and regulations or advanced by its own enlightened self-interest remains to be seen. As Robert Atkinson notes, this may be changing with the general feeling in industry and business sectors is that the concept of sustainability is gradually moving from voluntary to mandatory (Chap. 8).

In their chapter on private regulation serving to provide sustainability governance of global supply chains, Marina Jentsch and Klaus Fischer (see Chap. 12) note the importance of a broader definition of governance¹ as indispensable, since the state is unable to act with the speed and accuracy necessary in today's fast paced environment. They show that the emergence of private standards has filled a vacuum left by government. Their extensive literature review suggests that because of the importance and risk associated with sustainability, the existing private sustainability governance instruments need to be more rigorously analysed, evaluated and further developed.

1.3 Private Sector Initiatives

In our fast-moving world, where government can rarely respond as quickly as the private sector, are companies the answer to sustainability? Most agree that it must be at least part of the answer. So how can that work when the private system has been engineered to be primarily self-serving and, more recently with fast-moving public trading, rewarded for short-term results regardless of potential long-term benefits. As Starbucks, a global trendsetter, was teetering between its current 'business as usual' and a chance to make substantial sustainability differences in areas where it sources products, its then CEO remarked that such decisions that are likely to be good for the

¹This definition goes beyond the traditional understanding of government providing most or all of the governance and notes "the sum of the many ways individuals and institutions, public and private, manage their common affairs (...) involving NGOs, citizens' movements, multinational corporations, and the global capital market" (Commission on Global Governance 1995, pp. 2–3).

long-term prospects of the firm and for sustainability overall are rarely taken into account by the market system that they succumb to. He noted that the pressure to deliver the right quarterly financial reports made that—and his job—very difficult.² This systemic problem makes it difficult to engage in sustainable practices when the incentives are for short-term returns. Some visionary CEOs disagree. A few years later, Unilever's CEO, Paul Polman, realising the problem, took a stand to not issue quarterly reports and to free up his firm from unproductive expectations. Curiously, and perhaps because it is also well run, his firm's move was rewarded by the market with higher share prices.

Smart corporate policy is vital to advance sustainability. Perhaps nowhere more so than in its day to day procurement practices. The world is full of firms whose marketing and CSR departments are touting sustainability goals or initiatives while the incentives at the core of their operations are achieving the opposite. The lack of visionary leadership is part of the problem, but another is the complexity of many global firms that does not allow senior managers to readily see the details of what is going on, much less influence them. Many operate as walled fiefdoms and need only meet their bottom line objectives to remain so. Organisations such as COSA or Sourcemap increasingly partner with firms to integrate the metrics and reporting that permit results-based management for sustainability within companies but an increased scale is needed. What are the lessons and the systems that work and how can we discern best practices?

Besides having transparent claims that can be verified, one of the simplest interventions would be to improve the sometimes ludicrous metrics used to only measure the basic practices or interventions. Measurement professionals call these interventions or outputs to denote what is being done. For example: how many farmers trained; how many women included; how many good policies in place. A better approach includes the outcomes or even impacts of such practices or interventions. This is the equivalent of focusing on how much of the house is built rather than how much a worker has been arranging or moving boards or bricks.

We now also have a burgeoning market for ecolabels that purport to confirm one or more sustainability practices. Of the 463 ecolabels³ available on the market today some do measure outcomes and a few even measure impacts but many of the standards behind the ecolabels simply confirm practices that should lead to expected outcomes, if all goes well.⁴ There is good reason for this, sustainability is complex

²Personal conversation between Daniele Giovannucci and Starbucks CEO Orin Smith.

³August 2019 Ecolabel Index lists 463 ecolabels in 199 countries, and 25 industry sectors.

⁴Standards propagated by leading public ecolabels such as the Rainforest Alliance, GoodWeave, or Forest Stewardship Council increasingly integrate outcomes such as defined protected areas or worker housing requirements. Yet, as is true for food safety standards, it is increasingly necessary to distinguish results or actual outcomes, e.g. “% presence of bacteria” from the many processes to limit bacteria.

and it is not easy to measure results. But, as interest grows, it is critical to focus more on actual outcomes and impacts.⁵

It is the complexity that overwhelms simple messages that marketing professionals and consumers prefer. Nuance and realistic complexity are neither easy to convey nor very popular. So, the explosion of ecolabels—the majority of them private efforts, meaning they have limited public scrutiny or oversight—is easy to explain. We want somebody to tell us if something is sustainable because the realities are complex. Friederike Sorg et al. are among the researchers who point out that firms, especially retailers or brands, and consumers increasingly rely on standards for their decision making, particularly, but not only, for fish (see Chap. 14). This, of course, can be a useful market mechanism that pays a service to do the complex work and then conveys an easy to digest result (affixing a label) to buyers. This need is equally strong for buyers and so organisations like GLOBALG.A.P. are adding new approaches, such as their localg.a.p. approach to train producers and help them participate and eventually upgrade (see Chap. 32 by Uribe Leitz et al.). The key factor here is, of course, credibility. Some have it and many do not, so the landscape is littered with a sometimes disorienting array of standards, verifications, and certifications.

There are efforts to compare the labels, such as the ITC Standards Map and the Sustainability Standards Comparison Tool. Such efforts provide a valuable service, permitting a side-by-side view of the criteria of the standards. Comparison tools can greatly improve our understanding of the labels and what they claim to do. However, such static comparisons do have limitations. They look primarily at the content topics of the standard or system as well as the expected credibility of that system (based on its stated approach) but not at the actual results or implementation realities of the standard or the system. Some standards systems, such as Rainforest Alliance-UTZ and FSC are actually investing to get to some of that understanding through independent and rigorous impact evaluations; but many still are not.

As of yet, there is no comprehensive global approach to go beyond the claims made on paper and determine the extent to which those label claims actually occur or have the desired benefit. Since nearly everyone involved—from the standards to the targets of standards to the consumers that ultimately pay for them—is interested in the reality of standards, assessing their actual effectiveness is clearly the next step. While some guidelines exist for assessing impacts⁶ and more research is emerging, there are two major barriers: cost and harmonisation. Both are addressed in the next section.

⁵Measuring impact is a science and difficult to do with the resources available to most sustainability-oriented standards. Outcomes are somewhat more accessible but are still more challenging to measure than process or interventions or inputs. For a more complete discussion, see *The COSA Measuring Sustainability Report: Coffee and Cocoa in 12 Countries* (COSA 2013, pp. 29–31; available online at: <https://thecosa.org/wp-content/uploads/2014/01/The-COSA-Measuring-Sustainability-Report.pdf>, last accessed 31 January 2019).

⁶ISEAL has established sound guidelines for its member organisations that include some of the most prominent standards bodies.

1.4 How the Monitoring and Evaluation of Sustainability Has Evolved

The critical need for sustainability evaluations is becoming increasingly evident to all stakeholders, from policy makers and consumers to supply chain managers and producers. With resources and time always constrained, everyone wants to know whether their choices or investments are indeed improving sustainability. Some even want to understand the returns on their sustainability investments—and not only the financial returns since we can now consistently calculate some of the social and environmental benefits (or costs) as well.

Monitoring and evaluating sustainability presents some unique challenges in terms of both the intrinsic complexity (cost) and the lack of standardisation or harmonisation. Ruerd Ruben rightly elaborates in Chap. 18 that impact evaluation in particular needs to address the net effects at different scales (i.e. farm, chain, landscape, sector), from different perspectives (i.e. environmental, social, economic), and for different types of stakeholders (i.e. farmers, workers, traders, processors, consumers, etc.). As Keith Child notes in Chap. 16, evaluating sustainability means to also understand the ‘why’ something occurred because only by getting clarity on the reasons (understanding contributions and even attribution), can we hope to scale up what works and dial back what does not. Part of that intrinsic complexity is the sometimes unclear dynamic between the factors noted above that can imply substantial synergies or trade-offs. Salma Halioui et al. illustrate in Chap. 20 the value of a system dynamics modelling approach for complex challenges in their approach to the solid waste management sector. Ruben, Child and Puri agree that good impact evaluation seeks insights through these dynamics and into what causes or hinders behavioural change.

Recent impact analyses illustrate the sometimes surprising failure of patterns or people to change despite the provision of well-known stimuli or incentives. To better understand key behavioural change interfaces Ruben highlights the importance of multiple-agency approaches for capturing behavioural change and inclusiveness in value chain relationships (see Chap. 18).

What makes understanding this complexity even more challenging is that many researchers and evaluators have failed to adopt standardised approaches for even the simple things they measure. This critical aspect of harmonisation is often overlooked by managers, evaluators, and some researchers. This can be a natural evolution in the early exploratory phases of knowledge gathering where standardisation is not yet appropriate. However, as the sciences of sustainability and evaluation are maturing, there is considerable scope for harmonised approaches and to identify best practices. Without a systematic process, it is unclear whether what is observed in evidence or data is a reflection of an accurate assessment or merely a by-product of the approach or process used. Approaches that are *ad hoc* and difficult to replicate or verify make it nearly impossible to compare and to build up a reliable body of learning. Sustainability efforts are also very contextual and consequently researchers, projects, or supply chains can more effectively measure and compare actual outcomes and

impacts locally with adapted standard tools that allow context to be seen rather than muddle the information. When metrics are harmonised or at least explicitly noted, measuring common topics such as cost of production, poverty or biodiversity can be aligned and readily compared. But often they are not. Unless a standard protocol is observed, it is very difficult to compare results, check research quality, or actually determine the value of one intervention versus another (Blackman Rivera 2010; COSA 2013).

More and more institutions are realising the heavy costs of non-standardisation at the same time that they realise that many things can be standardised, though not all of course.⁷ Considering the high stakes of sustainable development, we cannot afford to fail at engaging with more credible and standardised systems of tracking or evaluation. For development agencies, donors, and businesses alike, the persistent failure to standardise can result in poor oversight and slow learning. Experienced professionals know that when researchers follow a unique or self-directed protocol, it is nearly impossible to compare results, determine best practices, or to learn across crops or geographies. Harmonised indicators are a start and many groups have embarked on this initial phase. The World Bank's respected LSMS team is working steadily toward more standardised survey processes; harmonised indicators and metrics are also the prime mandate of the COSA learning consortium with 55 institutions and this trend spreading to organisations as diverse and varied as the Sustainable Food Lab, ISEAL, the InterAmerican Development Bank, McDonald's, the Sustainability Consortium, Lindt Chocolate, and the Government of Mexico.

The cost of effective evaluation is decreasing but still represents a substantial investment for many organisations or projects. Part of that investment is in securing the necessary experience and good fieldwork to gather reliable data and to conduct effective analyses.⁸ Improved and more widely accepted protocols for good evaluation (e.g. effective sampling designs, control group selection and matching models, mixed methods integration) increasingly serve to make evaluation efforts productive and useful for learning. New technology is also playing a major role from the ability to have high-frequency data gathering (e.g. SMS) to survey software that can eliminate data entry, minimise data cleaning, and dramatically reduce survey time while improving data accuracy in several ways (data piping, skip logic, internal validation, external quality controls, etc.).

⁷A number of harmonisation advances have been undertaken in recent years. Prominent examples include: FAO Sustainability Assessment of Food and Agriculture systems (SAFA for Smallholders) aligned FAO, COSA, Grameen, Soil&More; Shared Approach for Smallholder Performance Measurement aligned the Sustainable Food Lab, ISEAL, COSA, Rainforest Alliance, Wageningen, Nestlé, Root Capital, IDH, Mars, Ford Foundation; The InterAmerican Development Bank SAFE Platform aligns dozens of firms and institutions using common metrics and reporting into one knowledge base.

⁸With many methods available, experience is needed to select the appropriate tool or instrument. Evaluation is made difficult and can also be questionable in many cases when it must rely primarily on secondary data.

Leading researchers and institutions are now advancing much greater methodological diversity and rigor and beginning to move away from the existing haphazard, fragmented, or merely anecdotal evaluation styles. More and more donors are attempting to impose the use of a solid scientific basis to reliably answer major questions. The investment stakes are high and fewer donors still rely on hidebound and outdated evaluation systems based on simplistic metrics from their logical frameworks (e.g. how many farmers trained or hectares influenced).

Leading development evaluation thinkers such as Howard White, the co-founder and former chief executive of the International Initiative for Impact Evaluation, have moved increasingly toward ‘the right tool for the purpose’ approach while maintaining the maximum rigor of process for reliable data. This counters the recent phases in the development community of excessive focus on a particular ‘method of the day’, often fuelled by one or another celebrity economist. Such fads can be costly and do not help us get to useful answers when sometimes a simple approach can serve better. Within the COSA consortium, the mandate is to “measure what matters”. Bob Picciotto, the legendary Director General of the Independent Evaluation Group of the World Bank (see Fig. 1.1), warned us to “beware the randomistas”⁹ as a caution that not every developmental activity can or should be evaluated just by a Randomized Control Trial. So, the notable recent work of Ruerd Ruben, Jyotsna Puri, and Keith Child (see Chaps. 18, 17 and 16 respectively) illustrate how new approaches can combine methods for optimal explanatory results and offer more open and multi-dimensional perspectives. Thoughtful approaches to measuring what matters are providing a more rigorous basis for understanding evidence and creating a solid foundation for both learning and accountability.

Sometimes, less evidence paradoxically triggers larger claims. This problem does not occur solely in corporate marketing or CSR departments. A number of development agencies, consultancies, and NGOs are aiming for, or even sometimes claiming, a level of change that is ‘transformational’ or ‘paradigm shifting’. Jyotsna Puri in Chap. 17 offers a schematic approach that could be used to characterise and assess transformational change, particularly the harder to see, yet critical, aspects that are often ignored, especially behavioural change. Ruerd Ruben outlines in Chap. 18 the case that value chain dynamics affect sustainability outcomes and are strongly influenced by the contracts, rules, and governance mechanisms that enable exchange relationships along the supply chain.

⁹Caution made public at the COSA Scientific Committee meetings in Stockholm.



Fig. 1.1 Bob Picciotto

1.5 Outlook and Emerging Issues: Perspectives from Select Initiatives

Throughout the understanding and management of sustainability we are confronted by the lack of functional knowledge that is presented in a way that can be utilised, and is made available in a timely manner. Tools are becoming available to better manage supply chains and projects from a sustainability perspective. Much of the problem starts at the beginning with the failure of many initiatives to clearly define (i.e. through program logic or theory of change) or to adequately map the factors that most affect them. If mapping is done well, then it is feasible to lay out the milestones along the relevant impact pathways that will lead to the defined objectives. Now we can actually monitor or measure the ongoing results so as to correct a course as it is being executed, and thus increase our chances of success in achieving a desired impact. More and more managers want to have an understanding of and control over the risks and opportunities in their supply chains or projects and the tools are increasingly available.

Thus, performance monitoring is coming into its own as it borrows from the rigor of impact assessment (good indicators and metrics) but strips down the process to the basic necessary information systems to clearly inform managers and do so in close to real time. This is much better than finding out what happened only years after the fact when the impact evaluation is done. As Jessica Mullan et al. show in Chap. 19, the real-world applications are vast and already realised by leading firms like Danone and Mondelēz International in very different supply chain applications. Technology is increasingly altering the possibilities as more and more functions can be carried out at low cost and even with an increasingly transparent process.