

Sustainability in Global Value Chains

Measures, Ethics and Best Practices
for Responsible Businesses

Edited by
Michael Henke
Holger Kohl



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PREFACE

Wealth has its price. As the standard of living for many people around the world rises, so does the consumption of resources. The highly industrialized countries have a particularly poor record: for example, the average German consumes no less than 16.1 tons of raw materials per year. That is twice as much as the global average and 10 per cent more than the European average. At the same time, Germans produce 412 million tons of waste every year. That corresponds to almost five tons of waste per person.

This worrying trend is a global one. Developing countries and emerging economies are largely relying on growth-linked industrialization and are using the same means as developed countries to provide their growing populations with an acceptable standard of living. Based on the current state of manufacturing technology, the production of steel, aluminium, plastics and cement alone will cause about 800 gigatons of CO₂ by the end of the 21st century. This means that the emissions just from these four material flows would account for the total global emissions permissible if the two-degree target is to be achieved.

The scientific community, governments and civil society are therefore faced with the question: How can we pursue prosperity today without depriving future generations of the foundations of an existence worth living?

The Sustainable Development Goals set out by the United Nations are the blueprint for achieving a better and more sustainable future for all. They address the global challenges we face, including those related to poverty, inequality, climate change, environmental degradation, peace and justice. The 17 goals are all interconnected, and, so that no one is left behind, it is important that we achieve them all by 2030, including Goal 12: Ensure sustainable consumption and production patterns. This goal also addresses issues related to supply chain management for sustainability by stating that ‘sustainable consumption and production aims at doing more and better with less’, net welfare gains from economic activities can increase by reducing resource use, degradation and pollution along the whole lifecycle, while increasing quality of life. There also needs to be a significant focus on supply chain operations, involving everyone from producer to final consumer. This includes educating consumers on sustainable consumption and lifestyles, providing them with adequate information through standards and labels and engaging in sustainable public procurement, among other things.

Based on this paradigm, this book focuses in particular on ‘the importance of supply chain management for sustainability in global value chains’ and addresses accompanying challenges in three main sub-areas:

Part One: Ethical principles of sustainable value chain management

Part Two: Measuring sustainability in global value chains

Part Three: Actions to continuously improve sustainability in global value chains

The book contributes to this pressing issue by describing current trends in industry, business and society and presenting research results in the areas of cross-company requirements for social and ethical sustainability principles, aspects of corporate governance to promote sustainability by measuring and managing business processes, and action-oriented aspects for the continuous implementation of best practices to further promote and foster sustainability in global value chains.

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LIST OF ABBREVIATIONS

ADC	average diversity curve
AR	action research
C2C	cradle-to-cradle
CA	cooperative awareness
CC	cooperative capabilities
CE	circular economy
CEP	courier, express, and parcel
CN	cooperative necessity
CO	cooperation opportunities
CPFR	collaborative planning, forecasting, and replenishment
CQ	communication quality
CSR	corporate social responsibility
DFG	Deutsche Forschungsgemeinschaft
EPI	environmental performance indicator
ETF	empty trip factor
FCL	full container load
GDP	gross domestic product
GSCM	green supply chain management
GVC	global value chain
HCT	high-capacity transport
IPT	information processing theory
LCL	less container load
LF	loading factor
LSP	logistics service provider
MNC	multinational corporation
MNE	multinational enterprise
OEM	original equipment manufacturer
PSM	purchasing and supply management
PSS	product-service systems
ROI	return on investment
SCM	supply chain management
SDG	sustainable development goal
SME	small and medium-sized enterprise
SSCM	sustainable supply chain management

TBL	triple bottom line
TCO	total costs of ownership
TDC	total diversity curve
TEU	twenty foot equivalent unit
VCM	value creation module
WBCSD	World Business Council for Sustainable Development
WCED	World Commission on Environment and Development