The Theory and Practice of Sustainable Supply Chains

Supply chains have been a concern for organizations since the early periods of the industrial revolution (Sarkis et al., 2011). Supply chain management as a research field is a more recent phenomenon. It has gained increasing importance as outsourcing and globalization have taken on greater roles. Supply chains are also facing immediate and long-term concerns about sustainability and sustainable development. Much of this concern has derived from pressures from industrial, regulatory, consumer, and community stakeholders.

Not only are there coercive pressures requiring organizations to take action on sustainability but also strong normative and mimetic pressures that form the core of competitive directions in this area play a role (Zhu & Sarkis, 2007). Organizations realize this and have gone beyond compliance adopting sustainability for competitive advantages. The business reasons also go beyond any moral imperatives. The business case for sustainability, especially supply chain sustainability, is multidimensional. Business reasons can include cost reduction through efficient use of resources; revenue generation from new uses of former wastes; improved image and reputation, building good will; creating a license to operate; and for reasons of building a resilient and reliable supply chain (Reinhardt, 1998; Sarkis, 2009).

To begin, we define sustainable supply chain management as the management of financial, information, and product flows with goals of inter, intra, extra integration with social and environmental concerns as the focus.

The supply chain literature is only starting to respond to this dynamic socio-economic and political environment. Since the 1990s, research has increased exponentially, with ten-fold more articles being published. More than three-quarters of these publications focus on the dimensions of the triple-bottom-line perspectives of environmental, social, and economic issues.

Significant and maintained progress is required, including the critical third pillar of sustainability: the social dimension. Interest in the third pillar has increased, but interest and balance in all areas is still important. There is much to understand about this complex topic because it covers multiple organizations, functions, and management concerns. Thus, research is needed to further develop theories, concepts, frameworks, and tools for true sustainable supply chains. The concerns are theoretical and practical, and thus there is a need for a focused issue on research and practice of sustainable supply chains.

Major Concerns in Sustainable Supply Chains

In organizing this special issue, we initially identified some topics of research in this area from the most general to the specific. Examples of topics include the following:

- Supply chain management and sustainability
- Supply chain supplier development and sustainability
- The role of the public, regulators, and other stakeholders in sustainable supply chain management
- New and collaborative product development and sustainability
- Manufacturing, innovation, and technology in supply chain and organizational sustainability
- Industry self-regulation mechanisms
- Balancing the three pillars of sustainability
- Making the business case for environmentally sustainable supply chains
- Human resources and behavioral research in sustainable supply chains
We did not try to target any specific topic, but allowed researchers and reviewers free rein to help us identify the most applicable and highest quality works submitted. We were not disappointed with some interesting and thoughtful work. We hope this output will push the envelope on understanding and managing sustainable supply chains.

Table 1 offers an overview of the seven articles contained in this special issue. To balance the topics there are five research articles and two case studies. As is the practice of Supply Chain Forum: An International Journal, the case studies are followed by some commentaries.

Of the seven articles, three focus only on the environmental pillar of sustainability, one on the social pillar, and three on both pillars. The ordering of these articles begins with those that focus on a single pillar, first environmental then social, and then move to those articles that focus on both pillars. The ordering generally follows the evolution of research that seemed to focus initially on single pillars and evolved to the more complex relationships of both and multiple pillars. Most of the articles use empirical survey approaches, but a literature review and two case studies help to round out the methodological perspectives of the works.

**Overview of the Special Issue Contributions**

Much of the early literature on sustainable supply chain management has focused on the environmental pillar (Brandenburg et al., 2014; Seuring & Müller, 2008) and so this special issue presents three articles focused on environmental issues in the supply chain. The first article, “Understanding Environmental Sustainability of Supply Chains: The Case of the Biofuels Industry in the UK” by Zokaei and Manikas, describes how economy and environment have complex links. The core research is illustrated with a description of the biofuels chain. The findings include a number of key opportunities such as resource efficiency, resource productivity, and total chain carbon reporting. The article results in supporting the policy concept of a “circular economy.”

The second article by Pereseina et al. uses an explorative study to analyze the differences between China and Sweden in the heavy vehicle industry. A major finding in this study is that consumers and authorities are highly concerned with environmental issues in Sweden but they have only started paying attention in China. Yet, the turnaround can be quick because the Chinese government can exert a direct and immediate pressure, contrary to the government in Sweden. Another finding is a significant conflict between environmental and economic issues in a very competitive sector, which may result in slower-than-expected integration of the two pillars in this industry.

<table>
<thead>
<tr>
<th>Authors</th>
<th>Title</th>
<th>Pillars of Sustainability</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zokaei and Manikas</td>
<td>Understanding Environmental Sustainability of Supply Chains: The Biofuels Industry in the UK</td>
<td>×</td>
<td>Survey</td>
</tr>
<tr>
<td>Pereseina, Jensen, Hertz, and Cui</td>
<td>Challenges and Conflicts in Sustainable Supply Chain Management: Evidence from the Heavy Vehicle Industry</td>
<td>×</td>
<td>Survey</td>
</tr>
<tr>
<td>Mitra Subrata</td>
<td>A Framework for Research on Green Supply Chain Management</td>
<td>×</td>
<td>Literature review</td>
</tr>
<tr>
<td>Stiller and Gold commented by Hartmann, Hofstetter and Grimm</td>
<td>Socially Sustainable Supply Chain Management Practices in the Indian Seed Sector: A Case Study</td>
<td>×</td>
<td>Case study</td>
</tr>
<tr>
<td>Ionescu-Somers and Sefert commented by Jaegler and Park</td>
<td>Leapfrogging to Mainstream: Unilever Makes Lipton Tea Sustainable</td>
<td>×</td>
<td>Case study</td>
</tr>
<tr>
<td>Acosta, Acquier, and Delbard</td>
<td>Just Do It? The Adoption of Sustainable Supply Chain Management Programs from a Supplier Perspective</td>
<td>×</td>
<td>Survey</td>
</tr>
<tr>
<td>Clancy and Narayanaswamy</td>
<td>Putting the Social into Commodity Chains: What Motivates Smallholders to Opt for Inclusion?</td>
<td>×</td>
<td>Survey</td>
</tr>
</tbody>
</table>
The third article in the trilogy of environmentally focused articles in this special issue is called “A Framework for Research on Green Supply Chain Management.” Through a review of 67 works, Mitra Subrata proposes a conceptual framework linking environmental practices with supply chain performance. The studied practices include green purchasing, manufacturing, logistics, product design, packaging, storage, transportation, distribution, and reverse logistics. Performance is measured among different dimensions: environmental, operational, organizational, financial, economic, and marketing. The author underlines the difficulty of adding social practices across a broad scale because of culture and tradition differences.

The remaining articles in this special issue are in line with the new trend in sustainable supply chains. The next publication focuses on the inclusion of social issues, the third pillar of sustainability. In their case study Stilli and Gold present the case of Syngenta Seeds India, a business unit of the Swiss agrochemical corporation Syngenta Intl. The case is commented on by Hartmann, Hofstetter and Grimm. Hartmann underlines the transparency of the case, particularly the critical aspects of sustainable supply chain management. Hofstetter points to the need of considering long-term, strategic partnerships that will help solve the social issue of child labor in this supply chain. Grimm offers a criticism that not all problems are solved in the real world, unlike in this case where most of the issues are addressed effectively. The case provides new insights: collaboration, evolution to a strategic view, incentive systems, and transparency along supply chains.

The last three articles combine the three sustainability pillars. Ionescu-Somers and Seifert describe the supply chain of Unilever, in particular of Lipton Tea. Unilever identifies sustainable challenges. The issues are how to translate sustainability into operational actions. The case is commented on by Jaegler and Park, who note the importance of collaboration among all stakeholders in the implementation of a sustainable supply chain.

Acosta, Acquier, and Delbard focus on the integration of sustainability at the supplier’s level. Enterprises have to adopt the point of view of suppliers and analyze their transformative potential. The authors apply their research in the food industry in Latin America, similar to many of the articles in this special issue. They highlight the importance of the industry association through their normative pressures. Their principal finding is the role of embedding sustainability demands into local network ties to faster adoption and diffusion in the upstream chain.

Finally, Clancy and Narayanaswamy illustrate their research through a biofuel park project and the villagers of Hassan district in India, representing an underlying theme in many of the articles in this special issue that focus on emerging economy countries. Their results indicate that partnerships of all the stakeholders that involve non-chain actors are positively linked to the success of a sustainable supply chain.

Future Research Direction and Conclusion

The articles highlight the difficulty of universal rules when it comes to the complexities of sustainability in the supply chain. Although some countries such as China have delayed efforts, they have a much more efficient and faster action potential than most developed countries. But this is not the case in all developing countries, such as India, which has to more greatly rely on a broader set of stakeholders beyond the government.

Intra, inter, and extra supply chain collaboration appears to be a key factor in the success of a sustainable supply chain. This collaboration needs to include multiple representatives within the supply chain and also stakeholders such as communities and NGOs. For the environmental pillar, a topic of concern is the criticality of resources. A circular economy with impacts on eco-design, reverse logistics, and resource productivity seems to be a very interesting topic for future research. For the social pillar, the study of traditions and territorial anchoring are subjects to deepen. For all these pillars, the introduction of incentives not only by government agencies but also by enterprises themselves needs to be considered. But, where and how are questions that still require investigation.

As observed in here, it seems that similar to globalization, sustainability and its roles in various social, cultural, political, and economic regimes needs to be investigated. Organizations in developing countries have taken on a larger and more visible role. The lessons learned from developing countries can be valuable for developed countries, unlike the standard paradigm of knowledge transfer from North to South that traditionally has been pursued. There is significant learning that can occur through knowledge transfer in many directions and needs further investigation. Overall, the articles in this special issue provide ample opportunity for identifying additional channels for research and investigation.

Acknowledgments

As is the case with any peer-reviewed journal articles, we would to thank all who contributed. Most important, we thank Professor Dominique Estampe, editor-in-chief of the Supply Chain Forum: An International Journal, who gave us the opportunity to guest edit this special issue. Additionally, we sincerely thank Claude Garabos, for her continued support and insights into the process. We extend our gratitude to all who helped us in reviewing the articles. The special issue editors wish to thank the following reviewers for their time and contributions:
Jun Borras, Sainte Marie University, Canada
Maria Brodin-Huge, University of Linköping, Sweden
Michael Browne, University of Westminster, England
Pierre Cariou, Kedge Business School, France
Claudia Colicchia, University of Hull, United Kingdom
Peter Dapiran, University of Melbourne, Australia
Laurent Fedi, Kedge Business School, France
Natasha Gondran, Ecole des Mines de Saint-Etienne, France
Kannan Govindan, University of Southern Denmark
Joerg Grimm, University of St. Gallen, Switzerland
Vincent Hsu, University of Nevada-Las Vegas, USA
Johannes Kraak, Kedge Business School, France
Guillaume Marquès, Ecole des Mines de Saint-Etienne, France
Valérie Moatti, ESCP Europe, France
Adrien Presley, Truman State University, School of Business, USA

Anicia Jaegler
Kedge Business School, Bordeaux, France

Joseph Sarkis
Worcester Polytechnic Institute, Foisie School of Business, Worcester, U.S.A.

References


