

## Chapter 8

# The Myth of Sustainability in Fashion Supply Chains

**Hakan Karaosman**

*Politecnico di Milano, Italy & Universidad Politecnica de Madrid, Spain*

**Alessandro Brun**

*Politecnico di Milano, Italy*

### ABSTRACT

*The global fashion market is expected to account for €1,512 billion by 2018. Yet, the fashion industry is associated with critical environmental and social impact due to extensive material use, energy consumption, and safety issues. Therefore, in contrast to traditional supply chain management (SCM), a more sustainable SCM must be introduced by the explicit integration of environmental and social objectives. This study attempts to synthesise both existing and new elements in comprehensive frameworks. The main contribution of this chapter is the application of an assessment tool to evaluate the impact of SC operations on sustainability. Subsequently, a performance measurement model is proposed to assess to what extent the level of sustainability could affect the operational performance areas. An adequate understanding of how SC of a fashion company could be configured toward sustainability, how sustainability must be assessed, and how SSCM performance could be measured is provided through this chapter.*

### INTRODUCTION

The world population has recently reached a significant figure of 7.3 billion people. Consequently, consumer goods industries experience a period of exceptional growth in order to meet individual's fundamental needs such as food and clothing. Nevertheless, these industries and related production activities are associated with critical environmental and social impact due to extensive material use, energy consumption, and health and safety issues. As human beings, we do things where we stuff down some inherent needs until they find a way to manifest them. Such unaddressed needs come bubbling up like a pot of boiling-hot water that overflows. That is what we can describe the urgent need of sustainability in energy intensive industries. Sustainability can be considered a synthesis of economic, social

DOI: 10.4018/978-1-7998-0945-6.ch008

## ***The Myth of Sustainability in Fashion Supply Chains***

### ***Box 1. Natural resource scarcity***

Sustainability is needed more than ever! According to The Guardian, there will be an inevitable increase in demand on the world's natural resources and there are not nearly enough resources to satisfy all human needs. Freshwater merely makes 2.5% of the total volume of the world's water. Nevertheless, considering 70% of that freshwater is in the form of ice and permanent snow cover, it is estimated that demand for water could soon exceed supply. Another important concern is related to oil. Total global oil is around 180 million tonnes (BP Statistical Review of World Energy), and it is believed to be enough only for the next 40 years. Global warming, on the other hand, is already having significant and harmful effects on communities, health, and climate. According to NOAA (National Oceanic and Atmospheric Administration) (2015), the global CO<sub>2</sub> concentration just passed 402 ppm (parts per million). This is a dramatic result considering the safe level of carbon dioxide in the atmosphere is 350 parts per million (CO<sub>2</sub>Now, 2015).

and environmental development, a triple-bottom-line (3BL) approach (Norman & Macdonald, 2003). The idea behind the 3BL is that a company's ultimate success could and should be measured not only by the traditional financial bottom line, but also by its social and environmental performance. The concept of sustainability emerges as a way to generate profits while respecting people at all levels of the organization and respecting planet by recognizing that resources are finite (Joy, Sherry, Venkatesh, Wang, & Chan, 2012).

Companies have redefined the concept of operations management using supply chain (SC) perspective through the incorporation of upstream and downstream partners into the boundary of investigation and management (Brandenburg, Govindan, Sarkis, & Seuring, 2014). Traditionally, supply chain management (SCM) has been defined as the management of physical, logical, and financial flows in networks of intra-and inter-organizational relationships (Mentzer et al., 2001). Among the conventional SCM research neither social nor environmental sustainability indicators have been emphasized. Even though environmental consideration in supply chain management is emerging (Bai & Sarkis, 2010; C. K. M. Lee & Lam, 2012), other aspects incorporating social sustainability such as social equity, health and safety as well as fair trade principles (Matten & Moon, 2008; Varsei, Soosay, Fahimnia, & Sarkis, 2014) are quite scarce. Therefore, in contrast to traditional SCM, sustainable supply chain management (SSCM) is characterized by the explicit integration of environmental and social objectives which extend the economic dimension to the 3BL (Beske & Seuring, 2014; Seuring & Müller, 2008).

Sustainability in SCM has captured the interest and vision of academics since the early 1990s, following the oil crisis of the mid 1970s and greenhouse gases emissions of the early 1980s (Diabat & Govindan, 2011; Mohanty & Prakash, 2013; Zhu, Sarkis, & Lai, 2008). Srivastava (2007) addresses that the quality revolution in the late 1980s and the SC revolution in the early 1990s encouraged companies to become more conscious. The previous concerns of SCM thus need to be expanded into a threesome to incorporate social, environmental, and economical considerations, especially in energy intensive industries. Hence, it is important to drive the focus toward one specific industry to underline the relevance and the need of sustainability. The textile and garment industry has always been big, significant and highly revolutionary. Yet, prior to advancing our knowledge with respect to its relevance for SSCM, it is imperative to emphasize how our focused industry has been transformed throughout the centuries.

The worldwide fashion market still significantly grows and the global fashion industry is expected to account for €1,512 billion by 2018 (MarketLine, 2014). Nonetheless, this growth jeopardizes numerous patterns. The usage of wool and fibres has a high impact on environment, and production is massively depending on non-renewable energy resources. Furthermore, the global context of the industry requires overseas production leading to large social impacts. During the favourable economic situation of the 1990s, companies were relatively reluctant to respond to concerns over social and environmental needs.

27 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

[www.igi-global.com/chapter/the-myth-of-sustainability-in-fashion-supply-chains/239273](http://www.igi-global.com/chapter/the-myth-of-sustainability-in-fashion-supply-chains/239273)

## Related Content

---

### Supply Chain Management in Pharmaceutical Industry: Opportunities and Challenges for Retailers

Snehil Saurav (2018). *Supply Chain Management Strategies and Risk Assessment in Retail Environments* (pp. 267-284).

[www.irma-international.org/chapter/supply-chain-management-in-pharmaceutical-industry/193310](http://www.irma-international.org/chapter/supply-chain-management-in-pharmaceutical-industry/193310)

### Research on Optimization of Project Time-Cost-Quality Based on Particle Swarm Optimization

Yanqing Song and Genran Hou (2019). *International Journal of Information Systems and Supply Chain Management* (pp. 76-88).

[www.irma-international.org/article/research-on-optimization-of-project-time-cost-quality-based-on-particle-swarm-optimization/225030](http://www.irma-international.org/article/research-on-optimization-of-project-time-cost-quality-based-on-particle-swarm-optimization/225030)

### Scheduling of Inbound Trucks at a Cross-Docking Facility: Bi-Objective VS Bi-Level Modeling Approaches

Mihalis M. Golias, Georgios K. D. Saharidis, Maria Boilean and Sotirios Theofanis (2012). *International Journal of Information Systems and Supply Chain Management* (pp. 20-37).

[www.irma-international.org/article/scheduling-inbound-trucks-cross-docking/62051](http://www.irma-international.org/article/scheduling-inbound-trucks-cross-docking/62051)

### Decision Support System for Real Time Vehicle Routing in Indian Dairy Industry: A Case Study

R. A. Malairajan, K. Ganesh, M. Punnniyamoorthy and S. P. Anbuudayasankar (2013). *International Journal of Information Systems and Supply Chain Management* (pp. 77-101).

[www.irma-international.org/article/decision-support-system-for-real-time-vehicle-routing-in-indian-dairy-industry-a-case-study/100787](http://www.irma-international.org/article/decision-support-system-for-real-time-vehicle-routing-in-indian-dairy-industry-a-case-study/100787)

### Perception About Inventory Management and Control at Quick Service Restaurants

Saibal Kumar Saha and Arun Roy (2024). *Strategies for Environmentally Responsible Supply Chain and Production Management* (pp. 228-247).

[www.irma-international.org/chapter/perception-about-inventory-management-and-control-at-quick-service-restaurants/341523](http://www.irma-international.org/chapter/perception-about-inventory-management-and-control-at-quick-service-restaurants/341523)