

Sustainability tensions in different governance structures – case studies on PHL in Kenyan dairy supply chains

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Introduction

Sustainable Supply Chain Management (SSCM) is “the management of material, information and capital flows as well as cooperation among companies along the supply chain while talking goals from all three dimensions of sustainable development, i.e. economic, environmental and social, into account which are derived from the customer and stakeholder requirements” (Seuring & Müller, 2008, p. 1700). Thus, the implementation of SSCM practices should contribute towards more sustainable supply chains, by considering the goals from sustainable development, i.e. reduction of PHL. As stated in current scholarly work (e.g. Hahn et al. 2010, 2014a, 2014b) goal conflicts/ sustainability tension are rather the rule than the exception. Thus, as a first step tensions need to be acknowledged to find resolution strategies. Such tension towards sustainability exist also in developing countries like Kenya. Different supply chain governance structures emerged and coexist within one industry, where their contribution to sustainability are unclear.

Research Question

What are the sustainability trade-offs, especially regarding PHL and how are they distinct by different governance structures in the Kenyan dairy supply chain?

Conceptual Framework

Governance Structures:

Gereffi et al. (2005) differentiates among markets, modular, relational, captive and hierarchy types of governance types. The supply chain continuum goes from low degree of explicit coordination and low degree of power asymmetry in spot markets to a high degree in hierarchies/vertical integration structures.

Sustainability tensions:

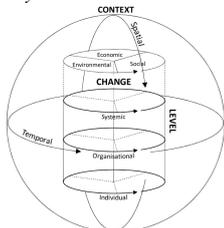


Figure 1 – Systematic Framework for the analysis of tensions in corporate sustainability by Hahn et al. (2014b, p.50)

Situation where economic, environmental and social aspects of corporate sustainability cannot be achieved simultaneously, are referred to as trade-offs and cause tensions between the dimensions. Thus, Hahn et al. (2014b) propose a strategy to manage the tensions in corporate sustainability and built on Poole and Van de Ven (1989) and their ideas on how to manage tension and paradoxes. → first step: acknowledgement of tensions.

Research Design/Methodology

Case studies on Kenyan dairy supply chain:

- information from the practitioner, e.g. which supply chain governance type can reduce PHL and brings environmental benefits or is from a social perspective more suitable
- qualitative research design includes semi-structured interviews on sustainability issues with 39 actors along the supply chain (NGOs, Farmers, Traders, Cooperatives, Bulking Centers, Small Scale Processors, large scale processors)
- other data material, e.g. homepage presentations, government papers, and NGO reports
- data were coded against the SSCM practices (Beske and Seuring 2014) and sustainability tensions from the Hahn et al. (2014b) framework.

Results

Table 1-Types of dairy supply chain governance structures in Kenya

a) hierarchical supply chains	cooling center connected to lead firm → the only sale flows go to lead firm
b) semi-coordinated supply chains	collection, bulking and cooling independently from the lead firm → milk could be sold to other market outlets apart from the lead firm
c) less-coordinated supply chains	no contact to a lead firm → exception: by chance but not planned



Figure 2 – transport systems from different governance types. Chilled truck for a), other for b) and c) (picture source: Lelea, Nato)

Table 2 - Analytical framework for sustainability tensions with selected elements from Hahn et al. 2014

Tension	Identification: Positioning in the framework	Characterisation: Underlying logic
1) Single supply chain actor vs sustainability goal of whole supply chain	Different economic, environmental and social aspects are prioritized by single actors compared to the supply chain as a whole.	Single supply chain actor does what is best for himself; typical principal agent problem.
2) corporate short-term vs long-term orientation	Different temporal foci of sustainability dimensions. Short-term orientation due to supply chain actors financial objective vs need for long-term orientation for environmental protection and social equity.	Intertemporal choice problem: corporate decision-makers make choices that are best for the short term but might have detrimental impacts for the long term.
3) efficiency vs resilience of socioeconomic systems	Tensions between efficiency of supply chains and resilience of socio-economic systems, i.e. their ability to absorb shocks.	Firms adopt similar solutions to increase their efficiency. homogenisation leads to a loss of diversity and this lower resilience at the systemic level.

Empirical background from case for 3): The push towards formalization and pasteurization may, if the supply chain works according to procedures of pasteurized milk, lead to less PHL. Nevertheless, by banning certain supply chain governance types, like the type c), leads to a more homogeneous dairy industry and loss of diversity. In the view of tension 3) this creates low resilience for the dairy supply chain, meaning less ability to absorb shocks. When the lead firms from governance type a) reject milk, the other governance types function as important viable alternative or even as a catch basin and can absorb the milk which is still good, but was rejected due to oversupply of the other channel. The absorption quantity has its limits, but seems as one short-term benefit of heterogenic in supply chain governance types.

Discussion

Tensions are starting points for a change in the supply chain design and integration. Weighing up efforts, which bring tensions and thus, as a result favour one supply chain governance type over the other, is not an easy task. Hereby incommensurables are compared, e.g. if pasteurized or raw milk should be the only milk sold, or if milk is rejected or if it is accepted. The alternatives have similar features, e.g. that they consider milk quality. Nevertheless, “[a] shortage of the common feature forces a comparison regardless of how different and incommensurable the alternatives are deemed to be in other respects” (Tullberg, 2012, p. 31). Thus, if one argumentation might be that, a pasteurized milk chain is better due to a better milk quality, this argument is short-sighted. It further depends on other factors, e.g. if the supply chain is chilled throughout.

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