



# LUND UNIVERSITY

## **Greening food supply chains: Analyzing the potential role of retailers in triggering/ensuring environmentally and socially responsible production of food**

Chkanikova, Olga; Kogg, Beatrice

*Published in:*  
1st CR3 Conference, Hanken School of Economics

2011

[Link to publication](#)

*Citation for published version (APA):*  
Chkanikova, O., & Kogg, B. (2011). Greening food supply chains: Analyzing the potential role of retailers in triggering/ensuring environmentally and socially responsible production of food. In *1st CR3 Conference, Hanken School of Economics* Hanken School of Economics.

*Total number of authors:*  
2

### **General rights**

Unless other specific re-use rights are stated the following general rights apply:  
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Read more about Creative commons licenses: <https://creativecommons.org/licenses/>

### **Take down policy**

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

LUND UNIVERSITY

PO Box 117  
221 00 Lund  
+46 46-222 00 00

Paper for CR3 Conference, Stream 5

**Greening food supply chains:**

**Analyzing the potential role of retailers in triggering/ensuring environmentally and socially responsible production of food**

Olga Chkanikova [olga.chkanikova@iiiee.lu.se](mailto:olga.chkanikova@iiiee.lu.se)

Beatrice Kogg [beatrice.kogg@iiiee.lu.se](mailto:beatrice.kogg@iiiee.lu.se)

International Institute for Industrial Environmental Economics

IIIEE/ Lund University

## Greening food supply chains:

### A study about the role of retailers in triggering/ensuring environmentally and socially responsible production of food

## Table of Contents

1	Introduction .....	2
2	Sustainability in supply chain management .....	3
3	Category management in SSCM: when is collaboration effective? .....	4
4	Power relations: when is succesful collaboration possible? .....	7
5	Lessons from the textile sector .....	9
6	The power of EU retailers .....	11
7	The SSCM practice of EU retailers.....	12
8	SSCM influence on sourcing strategies .....	14
	10.1 Defining sustainable choices.....	14
	10.2 Exercising positive influence over suppliers .....	15
	10.3 Exercising control over relevant aspects in the supply chain .....	16
9	Conclusions .....	17
10	Further research implications .....	18

## 1 INTRODUCTION

The food sector plays essential role in the economic and social well-being of European citizens (EuropeanComission 2009a). Food supply chains span between three major economic sectors in Europe: agriculture, food processing and the distribution industry, representing together over 5% of EU value-added and 11% of EU employment(CIAA 2009). At the same time, food is responsible for a large share of household related environmental impacts (29% of GHG emissions, 58% of eutrophication, 30% of acidification and 32% of eco-toxicity) (Tukker, Huppes et al. 2006: p. 92).

Current trends in the population growth also place food security and sustainability among the top priority issues for EU governments and international organisations. The increasing political consensus is complemented with growing environmental awareness of European consumers: eight out of ten EU citizens consider environmental product impact as an important factor in their purchasing decision-making (EuropeanCommission 2009b).

In order to meet the unprecedented challenge of feeding an increasing population while curbing associated environmental impacts a fundamental change in the current food system is required. Such a shift needs an active facilitator who could set and implement the sustainability agenda in the food supply chain. Recently, it has been argued that retailers might become a vital agent of change towards sustainability due to their size, consolidation of the bargaining power and strategic

positioning at the intersection between different supply chain players (Ytterhus, Arnestad et al. 1999; Durieu 2003; SustainableDevelopmentCommission 2008; CIAA 2009)

This paper presents the initial results from an ongoing study which focuses on sustainable supply chain management within the food retail sector. The study is designed to describe and analyse the practice of retailers and the potential that retailers have for exercising a positive influence on food production. Our aim in this paper is to discuss key questions that arise in this context and the relevant frameworks that may shed light on these questions. In addition we present the initial findings from a first round of interviews with CSR representatives at Swedish retailers.

This paper draws on literature review of academic papers from peer-reviewed journals and available to date reports on sustainability in retail sector. The literature review includes scan of existing theories in supply chain management field and its sustainability function, as well as overview of existing 'best practices' among European retailers to trigger sustainability improvements in their supply chain. Additionally, pilot interviews with representatives of three Swedish retail organizations have been conducted, namely ICA, Coop and one of the discounter stores that prefers to stay anonymous. The respondents contacted represent chief CSR managers at Group level of each respective retail organizations.

## 2 SUSTAINABILITY IN SUPPLY CHAIN MANAGEMENT

Recent changes in the supply chain management function has occurred together with challenges of incorporating sustainability concerns due to growing environmental and social awareness (Carter and Rogers 2008; Seuring and Muller 2008a; Gold, Seuring et al. 2010). In exploring contribution of supply chain management function to sustainability, Preuss (2005) referred to recent transformation of this function from simple clerical role of ensuring good price and continuity of supply towards strategic role of contributing to organizational competitive advantage. As supply chain function is responsible for sourcing the external inputs, it is important in guaranteeing the supply quality, including compliance with sustainability criteria. "Seen from a life-cycle perspective, environmental initiatives are impossible without involvement of the supply chain management function" (Preuss 2005: p.124).

As defined by Mentzer, Dewitt et al. (2002: p.18) supply chain management represents "systematic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole". Preuss (2005) distinguished between managing three interrelated elements of supply chain, namely the flow of goods and materials, information flow and supply chain relationships.

In defining the notion of sustainability in supply chain management both Carter and Rogers (2008) and Seuring and Muller (2008) referred to the concept of triple bottom line (TBL) where environmental and social considerations aligned with economic objectives should form a basis for long-term performance in supply chain. Seuring and Muller (2008a: p.1700) provided the following definition of sustainable supply chain management (SSCM) as ***"management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder***

**requirements”**. Such integrative approach in defining sustainability on the basis of TBL concept, as well as broadening the concept of sustainability from organization to inter-organizational level form the distinctive features of SSCM and Carter and Rogers (2008) argued that this require alternative rather than conventional managerial practices.

Relationship management represents one key constituent elements of supply chain management. Many contributors have stressed the need for collaboration in sustainable supply chain management (Bowen, Cousins et al. 2001; Vachon and Klassen Robert 2008; Gold, Seuring et al. 2010; Pagell, Wu et al. 2010). Gold, Seuring et al. (2010), argued that inter-firm collaborative relationships help companies creating sustainability resources and competences that otherwise would not be possible to acquire (e.g. sustainability related knowledge via inter-organizational learning, joint environmental solutions as product and process design etc.). Seuring and Muller (2008a: p. 1706) referred to “a much increased need for cooperation among partnering companies in sustainable supply chain management”.

In theory a collaborative approach, has many potential advantages. Closer relationships provide better understanding and insight into the suppliers operations, which may facilitate the process of control and verification of compliance. Additionally, closer collaborative relationships are conducive to foster trust among organisations which may reduce the need for control. Finally, closer collaborative relationships may enable a better insight and understanding of each organisation’s needs and capabilities which may also facilitate innovation for sustainability purposes (Wilson 1995; Hall 2001; Johnson 2004; Gold, Seuring et al. 2010; Pagell, Wu et al. 2010).

However, some authors argue that the situations where collaboration is possible are limited, and that developing and maintaining such partnerships is costly and risky (Bensaou 1999; Frohlich and Westbrook 2001; Fawcett and Magnan 2002; Williamson 2008). Among the barriers mentioned are considerable investment costs into partnership development and complexity of coordination effort (Seuring and Muller 2008a). Moreover, as inter-firm interaction is characterized by social and cultural complexity, and constantly evolving over time, Gold, Seuring et al. (2010) noted that it is highly unpredictable and hard to manage, and therefore it is difficult to provide easy recommendations on how collaboration between companies should be established.

From a CSR perspective, the question then becomes if responsibility in the supply chain requires collaboration or whether SSCM can work without collaboration? To reflect on this question the following sections on category management approaches and power relations in supply chain are presented.

### 3 CATEGORY MANAGEMENT IN SSCM: WHEN IS COLLABORATION EFFECTIVE?

While collaboration undoubtedly may offer advantages in relation to the exercise of responsibility in the supply chain, traditional purchasing theory suggests that a collaborative approach only is effective in certain circumstances. Kraljic’s concept of purchasing portfolios (Kraljic 1983) is nowadays widely recognized among researches and supply chain practitioners as an effective tool for managing business relations with suppliers (Olsen and Ellram 1997; Gelderman and Van Weele 2003; Pagell, Wu et al. 2010). In Kraljic’s model four purchasing portfolios are presented along with prescribed purchasing strategies (Figure 1).

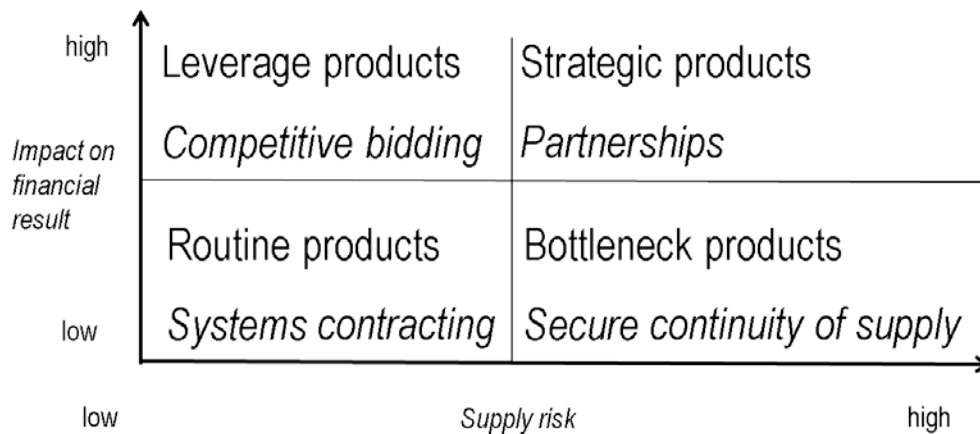


Figure 1. Kraljic's model of purchasing portfolios. Adapted from Kraljic (1983) and Van Weele (1994).

In line with the argument that SSCM needs collaboration along the supply chain, a recent study (Pagell, Wu et al. 2010) has however, revealed interesting phenomena related to how environmentally proactive companies are developing purchasing portfolios. Products that according to the Kraljic's model of purchasing portfolios, should be sourced through competitive bidding were instead treated in the manner recommended for strategic items. For instance, the commitment was made to pay product price premium, provide long-term contracts and support for supplier development, and as few suppliers as possible was kept. According to the framework of Kraljic (1983), this approach represents a misallocation of resources and thus the buying company should be experiencing suboptimal economic performance. Still, Pagell, Wu et al (2010) found that the companies involved in applying SSCM were rather thriving and prosperous, performing pretty well economically with revenue growth above industry average (Pagell, Wu et al. 2010).

Haake and Seuring (2009) have also noticed some deficiencies of the Kraljic model in regard to SSCM. They argued that in some situations so called non-critical items, to which companies do not usually pay much of attention, might have significant environmental/social impact and therefore should be managed differently than suggested by Kraljic portfolios. "When avoiding the risks associated with sourcing in global supply chain, focal companies might find themselves in a situation, where they must spend more attention on the sourcing of minor components" (Seuring and Muller 2008a: p.1705).

Based on the observations of implemented purchasing strategies in SSCM, Pagell and Wu et al. (2010) proposed a modification of the Kraljic concept designed to help companies meeting associated challenges and elaborating on better strategies to organize sustainable purchasing portfolios using 'hybrid' explanation from the other theories as transaction cost economics (TCE), resource-based view (RBV) of firms and stakeholder theory.

In the Sustainable purchasing portfolios model suggested by Pagell, Wu et al. (2010) (Figure 2, Figure 3) a key distinction, as compared to the original Kraljic model, is that the concept of profit impact has been expanded to reflect a threat to all three parameters of the triple bottom line. With regards to the categories and the recommended purchasing strategies, the only change is that the leverage items or commodity category has been divided into three subcategories: strategic commodity,

transitional commodity and true commodity. The authors argue that this division occurs into so-called transition period, when company decides to optimize supply chain performance based on TBL.

*True commodities* mainly retain characteristics of the leveraged items, where supply risk is described as low and high impact exists only within one aspect of the TBL. In this case it would be easy to switch towards other suppliers and differentiation would be applied in regard to one issue, that is in regard to sustainable sourcing is environmental or social impact within same price range (Pagell, Wu et al. 2010).

Commodity would be considered as *transitional* in the short-term situation of information asymmetries. While supply risk is considered as high, relationship-based investments would be made in regard to inputs previously treated as commodity-type products. However, later on, with decrease in information asymmetries and increase in the number of suppliers complied with stakeholder's expectations, supply risk would be lowered. Consequently, purchasing tactics will be changed back to the true commodity strategy (Pagell, Wu et al. 2010). "In the short term, this may be the most difficult category to manage.... Recognizing the transition will be the key to avoiding either unnecessary costs or risks" (Pagell, Wu et al. 2010: p.69).

Commodity starts to be treated as *strategic* to help companies achieve strong competitive advantage in the long-term perspective. Managing commodity-type inputs in strategic manner is beyond accounts of simple market economics, where buying firms are supposed to downgrade suppliers towards lower risk category. On the opposite, supply risk in case of strategic commodity is consciously increased, with expectations that it would contribute to high level of TBL performance on variety of dimensions. Improvements on multiple aspects of TBL distinguish strategic commodity from true and transitional commodities (where differentiation exists only on one dimension, e.g. price or social, or environmental impacts) and make asset specific investments worth it overtime (Pagell, Wu et al. 2010)

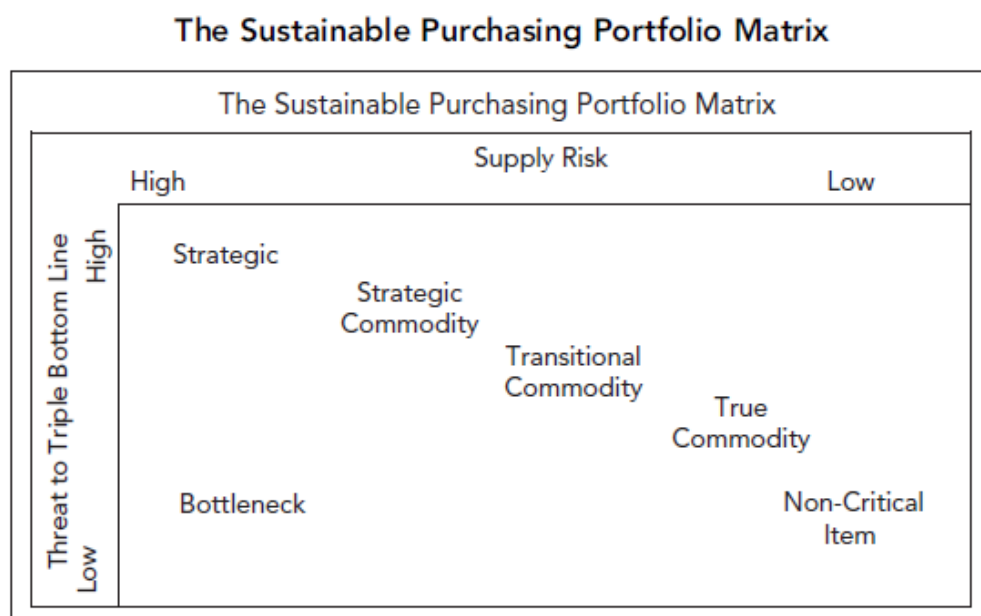


Figure 2. Sustainable Purchasing Portfolios. Source: (Pagell, Wu et al. 2010: p.68)

Revised Purchasing Portfolio Categories

Kraljic Category	New Category	Supply Risk	Risk to Profits, the Environment and/or Society	Short-Term State?
Strategic	Strategic	High	At least one is high	No
Bottleneck	Bottleneck	High	All low	No
Noncritical item	Noncritical item	Low	All low	No
Leveraged	True Commodity	Low	One is high, others low	No
Leveraged	Transitional commodity	Presently high due to information asymmetry — will return to low	One is high, others low	Yes
Leveraged	Strategic Commodity	Buyer moves from Low to high	At least one is high	No

Figure 3. Revised product categories of purchasing portfolios in regard to SSCM. Source: (Pagell, Wu et al. 2010: p.68)

#### 4 POWER RELATIONS: WHEN IS SUCCESSFUL COLLABORATION POSSIBLE?

While Kraljic's model of purchasing portfolios prescribes when a collaborative approach is appropriate from the perspective of efficiency in purchasing operations, Cox (Cox 2001c) note that there are only certain power situations that are conducive to successful collaboration.

According to Cox (2001c) failures in proactive supplier development arise as a result of practitioners failing to understand the impact that power circumstances has on the outcomes of such initiatives: "Only when the buyer is in a position of dominance over the supplier and capable of leading innovation, or there is an interdependence of power in which a mutual coincidence of interest encourages joint learning, can this approach be made to work" (Cox 2001c: p.46) . Cox (2001c) further argued that in the situation of supplier dominance or buyer-supplier independence, "it is unlikely that suppliers will have any real incentive to undertake specific innovations for any one customer" (Cox 2001c: p.46).

The work of Cox (Cox 2001a; Cox 2001b; Cox 2001c) contributes to understanding of power circumstances between buyers and suppliers in specific business contexts (as illustrated in Figure 4), and consequently when a collaborative approach to supplier development, also within the field of sustainability performance, is likely to be successful.



## THE ATTRIBUTES OF BUYER AND SUPPLIER POWER

ATTRIBUTES OF BUYER POWER RELATIVE TO SUPPLIER		BUYER DOMINANCE	INTERDEPENDENCE
		<ul style="list-style-type: none"> <li>• Few buyers/many suppliers</li> <li>• Buyer has high % share of total market for supplier</li> <li>• Supplier is highly dependent on buyer for revenue with limited alternatives</li> <li>• Supplier switching costs are high</li> <li>• Buyers switching costs are low</li> <li>• Buyers account is attractive to supplier</li> <li>• Supplier offerings are commoditised and standardised</li> <li>• Buyer search costs are low</li> <li>• Supplier has no information asymmetry advantages over buyer</li> </ul>	<ul style="list-style-type: none"> <li>• Few buyers/few suppliers</li> <li>• Buyer has relatively high % share of total market for supplier</li> <li>• Supplier is highly dependent on buyer for revenue with few alternatives</li> <li>• Suppliers switching costs are high</li> <li>• Buyer switching costs are high</li> <li>• Buyers account is attractive to supplier</li> <li>• Supplier offerings are not commoditised and customised</li> <li>• Buyer search costs are high</li> <li>• Supplier has significant information asymmetry advantages over buyer</li> </ul>
		INDEPENDENCE	SUPPLIER DOMINANCE
ATTRIBUTES OF BUYER POWER RELATIVE TO SUPPLIER	LOW	<ul style="list-style-type: none"> <li>• Many buyers/many suppliers</li> <li>• Buyer has relatively low % share of total market for supplier</li> <li>• Supplier is not dependent on buyer for revenue and has many alternatives</li> <li>• Supplier switching costs are low</li> <li>• Buyers switching costs are low</li> <li>• Buyers account is not particularly attractive to supplier</li> <li>• Supplier offerings are commoditised and standardised</li> <li>• Buyer search costs are relatively low</li> <li>• Supplier has only limited information asymmetry advantage over buyer</li> </ul>	<ul style="list-style-type: none"> <li>• Many buyers/few suppliers</li> <li>• Buyer has low % share of total market for supplier</li> <li>• Supplier is not at all dependent on the buyer for revenue and has many alternatives</li> <li>• Supplier switching costs are low</li> <li>• Buyer switching costs are high</li> <li>• Buyers account is not attractive to the supplier</li> <li>• Supplier offerings are not commoditised and customised</li> <li>• Buyer search costs are very high</li> <li>• Supplier has high information asymmetry advantages over buyer</li> </ul>
	HIGH		
		LOW	HIGH
		ATTRIBUTES OF SUPPLIER POWER RELATIVE TO BUYER	

Figure 4. Understanding Buyer and Supplier Power: A Framework for procurement and Supply Competence. Source: (Cox 2001b: p.14)

As noted by Pagell, Wu et al. (2010) the CSR agenda sometimes push companies to engage in supplier collaboration even for product categories where collaboration is considered to be less effective according to the prevailing model of purchasing portfolios suggested by Kraljic (Kraljic 1983) . However, since the CSR agenda of a company is often highly influenced by the expectations and requirements of salient stakeholders, as opposed to being unilaterally defined by the company itself, it is reasonable to assume that the issues that the company is compelled to address may not necessarily reside within parts of the supply chain where the power circumstances are favourable for collaboration. Indeed there are frequent examples where legal requirements, or demands by other salient stakeholder groups, compel companies to address environmental or social issues that arise, or are determined, within the supply chain even when those issues are related to product groups that does not fit into the standard definition of a strategic product, and when the focal company face a situation of mutual independence or even supplier dominance in relation to affected parties. Adding to the complexity it is important to recognize that the issue at hand may often be located

several tiers upstream in the supply chain beyond the scope of the focal company's direct dyadic relations.<sup>1</sup>

The framework by Kraljic (1983) offers relevant insights with respect to when collaboration may be effective and the subsequent adaptation by Pagell, Wu et. al. (2010) illustrates that sustainability issues influence sourcing practices. But given what is shown about the challenges and costs associated with inter-organisational collaboration, and the heterogenic and dynamic nature of power circumstances in many supply chains, it would be very limiting indeed to conclude that collaboration is the only path to exercise responsibility in the supply chain. The important question is then to understand how to address SSCM under different set of power circumstances and for different types of product categories<sup>2</sup>

## 5 LESSONS FROM THE TEXTILE SECTOR

Social and environmental responsibility is a broad concept and the issues that may be brought to the corporate agenda can be very wide indeed, ranging from labour rights, to chemicals in products, to point source pollution, and the CO<sub>2</sub> or water footprint of a product. All of these issues may arise, or be influenced by, actors at any point along the supply chain.

In such a context it is important to find common denominators, to look for patterns that transcend each specific situation. Based on case studies of SSCM initiatives addressing a range of different issues initiated by focal companies in the textile sector, Kogg (2009) developed a framework which identifies generic approaches employed to address environmental and social aspects in the supply chain (Figure 5).

---

<sup>1</sup> The scope of corporate responsibility is for an increasing number of stakeholders linked to the life cycle of a product. In the Swedish context have seen several examples of this; Fashion retailers were for instance criticised because of animal cruelty in sheep farming in Australia, and they are frequently under pressure with regards to under aged or under paid workers in cotton farming, and in the automotive industry Volvo recently came under pressure from an NGO because of problems identified in the platinum mining operations of AngloAmerican in Africa.

<sup>2</sup> While certain sustainability issues may be of high enough relevance to motivate a change in purchasing strategies, others may be of lower priority so as not to motivate a complete shift in purchasing strategies, but still of importance to address.

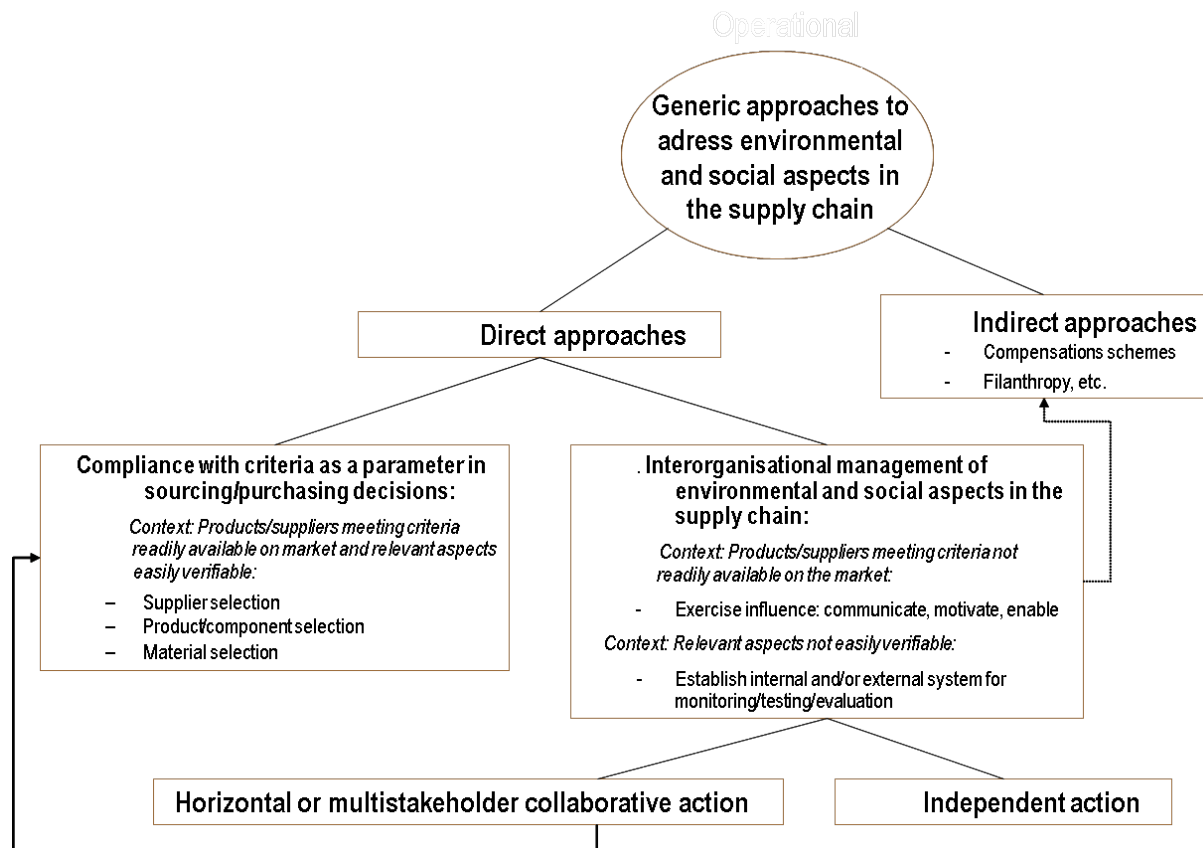


Figure 5. Generic approaches to address environmental and social aspects in the supply chain. Adopted from Kogg (2009)

The case studies by Kogg showed that the same focal company would adopt its SSCM practices, so that different approaches would be used for different issues and while interorganisational collaboration between actors in the supply chain was present it is important to note that there were also initiatives to collaborate horizontally (or through different types of multi stakeholder initiatives) for the purpose of addressing key issues in the supply chain. In the complex supply chains of the textile sector, the role of standards and certification schemes as a tool for facilitating some of the tasks associated with assuming responsibility for environmental or social aspects in the upstream supply chain is apparent. From a sourcing and purchasing management perspective, the existence of standards and associated verification schemes allows the buyer to outsource two critical tasks associated with responsibility in the supply chain, the task of defining what is “good” and the task of verification of compliance. It may also relieve the buyer of exercising direct influence on suppliers as the market signals may motivate a broad enough supply base to adopt standards without further efforts from the side of the buyer.

The lessons that could be drawn from this study is that assuming responsibility for environmental and social aspects that arise, or are determined, in the supply chain can be done **by choice**; e.g. by deselecting substandard suppliers/products/inputs or selecting suppliers/products/inputs in

compliance with frontrunner standards. However, when the desired choice is not available, the focal company must find ways to **exercise influence** in order to **trigger desired change**.<sup>3</sup>

Regardless of whether the buyer exercise responsibility in the supply chain through choice or through direct influence, another fundamental task associated with SSCM is the element of control or verification. If the buyer is not able to verify the product or supplier performance on relevant aspects, the buyer loses the ability to transfer the information further. Thus the ability to control or verify the nature of impacts of a product's or supplier's compliance with certain sustainability criteria is the means to be able to communicate product and supply chain sustainability performance to consumers and other interested stakeholders. This makes it central for the ability of the buyer to gain market value out of the efforts spent on addressing sustainability in the supply chain. Here again we find that standards and associated certification schemes may play an important role as they may allow the buyer to effectively outsource the task of onsite compliance verification to accredited certification service providers, reducing the task of the buyer to ensuring that the correct documentation is in place.

In our study of the retail sector we seek to understand how retailers address choice, influence and control while at the same time seeking to understand the power and sourcing context in which these initiatives are implemented. In addition, we seek to explore the role of external service providers, and collaboration initiatives, not only between the buyer and it's supplier but also between the buyer and it's competitors or in broader multi-stakeholder initiatives, which seem to play an important role for many companies when addressing issues of environmental and social responsibility in the supply chain.

## 6 THE POWER OF EU RETAILERS

As a cross-cutting industry, retailer sector binds together various players in the food chain: farmers, producers, distributors and customers. Underlying the anticipation that retailers may assume the role of change agents in supply chain is not only the realization that retailers have a unique position as the link between the producers and the consumers of food, with the ability to interact and influence both parties, but also the expectations that retailers can, if they want to, exercise coercive power upstream.

According to Cox (2001c), the food retailing supply chain power regimes are conducive to proactive supplier development as its extended networks of relationships is structured of buyer dominance or buyer-supplier interdependence.

---

<sup>3</sup> The desired change may be to get the supplier to adhere to *standardized criteria* (either minimum or front runner, that can apply to the product or the supplier, or both). However, the desired change may also be more loosely defined and rather than compliance the buyer may be looking to promote *sustainability innovations* within the supply chain.

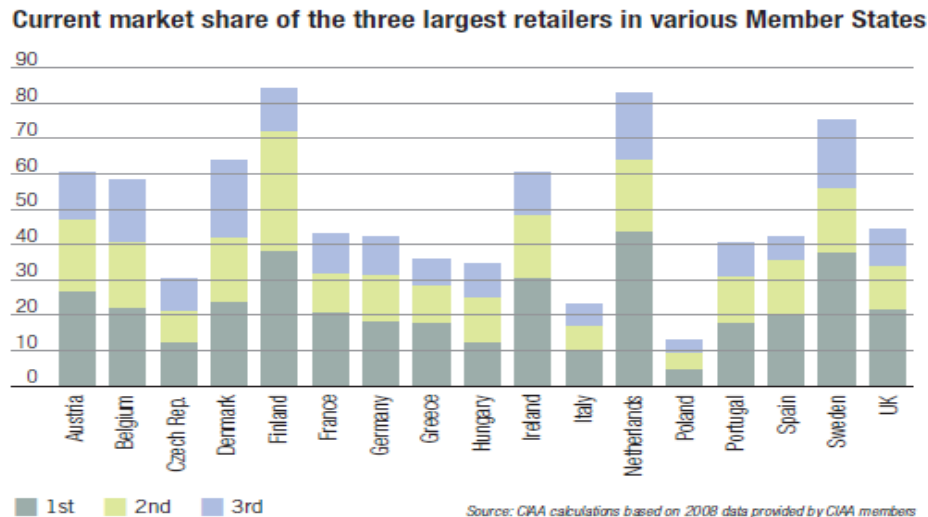


Figure 6. Market share of the three largest retailers in EU. Source: (CIAA 2009: p.17)

In European context, large-scale retailers form so-called oligopsony, concentrating high market shares in EU (Figure 6). Swedish food sector in particular shows high level of concentration in grocery market, with ICA, Axfood and Coop making up 83,7% of market share (Axel Johnson AB 2009). Together with dominance of large-scale retailers in the Swedish market, the market shares of large food processing companies is also growing. For instance in fresh & processed meat, flour & bakery and fresh& processed fish subsectors the respective market shares of three large companies account for 57,7%, 54,7% and 57% (Aragrande, Segré et al. 2005). Therefore, while three major retail chains in Sweden might find themselves to certain extent in position to exercise power over suppliers as major commercial channel of food products, in some food subsectors it is not always a case. Concentration trend in food processing industry represents the countervailing power to balance retail power.

Additionally, the share of private or so-called retail own brand products is continuing to increase at the European market, representing 25% of the total sales in 2005 (Sandberg 2010). If private label products has been traditionally perceived as a lower cost alternatives to the original brands (Huang and Huddleston 2009), nowadays the situation is changing with development of retailer's premium brand products of high quality and innovative product design (Sandberg 2010). This could imply more power and control over manufactures of own branded products what might make it easier for retailers to embed sustainability concerns into supplier practices.

## 7 THE SSCM PRACTICE OF EU RETAILERS

In recent years European retailers started to be active in imposing food sustainability requirements upstream their supply chains (Forum for the Future 2008; BIO Intelligence Service 2009). The retail practices of greening supply chains can take various forms. These can include requirements and/or collaboration with supply companies to decrease associated environmental impacts; sourcing products with lower environmental profiles (e.g. local and organic) or phasing out products with high environmental impacts (Chkanikova and Mont 2010). Among the issues that have received widespread attention among retailers are food safety, animal welfare, local produce and ethical trading (human rights, social welfare and fair trade standards) (Jones, Comfort et al. 2005a).

General practice among EU forerunners is to develop private codes of conduct and evaluation procedures to ensure sustainability of products and suppliers manufacturing processes, e.g. TESCO, MIGROS, REWE group, Carrefour (BIO Intelligence Service 2009; ETC/SCP 2010; European Commission 2010; European Retail Round Table and EuroCommerce 2010). Being internally developed sustainability requirements vary from shop to shop and refer mainly to first-tier suppliers. However, some retailers as Kesco and M&S target to cover more business partners upstream the supply chain, e.g. contractors and subcontractors (Storebrand Investments 2003).

Important event towards systematization of sustainable sourcing approaches has recently happened in the European retailer sector. On June 24, 2010, nineteen major retailers and seven retail organizations have signed up the Retail Environmental Sustainability Code. However, it is still voluntary, with business leaders in the membership, and focuses on sourcing only specific product categories.

Some retailers, e.g. Sainsbury, Waitrose, John Lewis, Greenbee in UK, do not only impose sustainability requirements on suppliers but collaborate with them on incorporating sustainability agenda into business practices (Forum for the Future 2008). For example, Sainsbury's 'Farm Promise' scheme supports British market transformation towards sustainable dairy sector, covering associated conversion costs and guarantying post conversion contracts for farmers.

Choice-editing measures aim to phase out highly unsustainable products from the retailer assortment. For example, some retailers phase out vulnerable species of fish, e.g. Kesco, Carrefour, Axfood and COOP, while others aim to source only MSc (Marine Stewardship Council) certified fish, e.g. Dansk Supermarked, ASDA WalMart (European Retail Round Table and EuroCommerce 2010). M&S, COOP, Axfood and Carrefour ban GMOs containing products (UNEP 2005) and M&S in the UK restricts certain artificial colours and flavourings in food products (Forum for the Future 2008).

Regarding choice-editing of products, the BIO intelligence report (2009) has classified initiative as middle proliferated among retailers. However, while variety of bans has been implemented, our own observations revealed, that choice-editing activity is still of the low profile in regard to number of product groups or areas of environmental concern it covers. Basically, most of retailers aim to source 100% of local fruits and vegetables when available in season, phase out certain vulnerable species of fish, implement ban on GMOs and PVCs in packaging. Choice-editing Initiatives by retailers are also can be described as unsystematic. While bluefin tuna is edited out by Carrefour in Italy and Spain, in French shops it is still available (although amount of sales is reduced). Some of activities are still at the planning phase, for example aims to source only sustainably certified palm oil, e.g. Sainsbury's, ASDA and Unilever. According to Forum for the Future report (2009) while trend in choice editing is present today, retailers have not yet fully realized the sustainability potentials in this regard and still distance themselves from the concept.

To ensure that suppliers follow sustainability requirements in their daily operations, some of EU retailers are engaged in monitoring compliance. This could be done by conducting own audits against sustainability requirements and/ or requiring accreditation by third-party. For instance, M&S together with requiring internal audits from direct suppliers, demand annual independent check up of 5% of manufacturing facilities. Third-party verification accounts for 20 due-diligence audits per year. In case of non-compliance evidences, penalty sanctions could be applied involving cease in

trade or even order cancelling. However, due to diligence audits are applied with main aim to create “problem-solving forums”, where retailers and suppliers discuss issues of how compliance could be achieved and surpassed. The idea behind is to inform suppliers about potential operational risks and facilitate learning process (Johnson 2004). Other retailers, e.g. Waitrose, Tesco, M&S, Somerfield, ask suppliers to join quality assurance networks, such as farm assurance or pesticide control schemes (Yates 2008; ETC/SCP 2010), or to obtain official third-party accreditation, e.g. KRAV organic (in Sweden) or British Retail Consortium (BRC) Standard (in UK and the Netherlands) (Havinga 2006)

## 8 SSCM INFLUENCE ON SOURCING STRATEGIES

### 10.1 DEFINING SUSTAINABLE CHOICES

Generally, Swedish retailers require their suppliers to comply with minimum legally required environmental standards. Only when it comes to sourcing of green products, there are ‘on top’ criteria which are specific to particular product categories, e.g. organic, fair-trade, animal well-fare etc.

Dedicated for developing sustainability criteria is Corporate Social Responsibility (CSR) department, which provide a support function for other departments within retail organization and for buyers in particular. Purchasing personal receive sustainability trainings on engaging in environmentally-responsible sourcing practices. This include list of criteria which should be applied in regard to particular product categories and how sustainability requirements should be effectively communicated to the suppliers. CSR department also provide direct information support for suppliers when the latter would like to launch a new line of green products (Personal Communication 2011a; Personal Communication 2011b).

Sustainability criteria in regard to product environmental qualities and sustainability of manufacturing practices are included into supplier agreements in the form of appendix and signed by both parties (Personal Communication 2011a). However, defining sustainability criteria is not a straightforward process and affected by variety of factors, such as consumer interests, long-term profitability, available LCA studies and media alerts. Among the factors that influence introduction of sustainable sourcing criteria, business-case and consumer uptake of eco-products were mentioned by respondents as the most important ones (Personal Communication 2011a; Personal Communication 2011b). For instance, the target audience of discount store in Sweden is predominantly aware with the price issue rather than food sustainability. This results in small share of green assortment available. In defining sustainable choices, discounter is relying on the sustainability criteria outlined by Naturskyddsföreningen (Nature Protection Organization) (Personal Communication 2011c).

In the study on use of environmental information by food purchasing companies in Sweden which also include overview of retail practices Bergstrom (Bergstrom, Soler et al. 2005) has revealed that environmental considerations in purchasing decision-making are influenced by financial realities. Sustainable sourcing policies “are not specifically scientifically formulated or based on life cycle assessments. They do not take precedence over traditional economic aspects. Other criteria are valued more highly, for example price, on-time delivery and food quality” (Bergstrom, Soler et al. 2005: 315).

During the pilot interviews conducted, when talking about sustainable sourcing practices, respondent at ICA (Personal Communication 2011a) were mentioning adoption of Global Food Safety Initiative (GFSI) standard. Currently eight out of ten own-brand suppliers at ICA are certified according to GFSI. Also, ICA suppliers of fruits and vegetables, as well as subcontractors, follow the Euro GAP (Global Agricultural Practice) protocol to ensure good agricultural practices. Both GFSI and GAP standard are examples of private governance mechanisms developed by international retail groups and aiming to enhance quality of food products to gain consumer trust (Burch and Lawrence 2005). Developed mainly with purpose to ensure compliance with food safety requirements, these standards nevertheless adhere to variety of sustainability concerns. For instance, Euro GAP standard addresses minimization of environmental impacts associated with farm operations, e.g. reduction in chemical usage, animal welfare, as well as covers such social aspects as farmer's health and safety.

## 10.2 EXERCISING POSITIVE INFLUENCE OVER SUPPLIERS

As it has been already mentioned, in Sweden the market power of food retailers and therefore their ability to exercise positive influence over suppliers might be counterbalanced due to concentration trend in food processing industry, e.g. meat, cereal and fish subsectors (Aragrande, Segré et al. 2005)). For instance, the respondent at ICA (Personal Communication 2011a) referred to some difficulties in making suppliers to adjust to sustainability criteria when ICA is a 'small customer', e.g. purchasing small share of food products from manufacturer.

Nowadays retailers actively develop high quality private brand products. In Sweden, retailer's private brands accounts for 21,3% of sales in flour and bakery products, 23,4% of sales in fresh and processed meat products, and 15,8% of sales in fresh and processed fish products (Aragrande, Segré et al. 2005). Among these are retail private eco-brands, e.g. 'I love eco' (ICA) and Änglamark (Coop). During the last year ICA has launched about thirty products under own organic label, and five private label Fair-trade products where launched in 2009 (ICA 2011).

The respondents have mainly associated private eco-brands as means to build brand image, gain customer confidence and provide cheaper alternatives of green products (Personal Communication 2011a; Personal Communication 2011b; Personal Communication 2011c). To what extent the mechanism of private eco-labelling might exercise positive influence in dictating requirements of sustainable sourcing is though still unclear and need to be further explored. However, as retail private eco-brands are cheaper compared to conventional green products, they obviously might create competition with other food items on the shelves. According to Cox (Cox, Ireland et al. 2002: p.116-117): "most food and drink manufacturers are at a distinct disadvantage when it comes to their relationship with the grocery multiples...even those products which are branded are being promoted with diminishing results...the successful establishment of own-labelling as a concept therefore, has given the grocery multiples greater choice when it comes to considering their sourcing strategy for a particular product".

During the interview with Coop (Personal Communication 2011b), the respondent has mentioned that amount of shelf space available was used as a leverage to motivate supplier to provide organic assortment. The respondent at discounter outlet has acknowledged that shelf policies are more tolerant in regard to organic products, e.g. eco-food is granted with more space even if sales are low. Such practice could be referred to another mechanism of supermarkets to utilize their power advantages derived from possession of critical commercial resource that is space available at



product shelves. According to Burch and Lawrence (2005: p. 4) “supermarkets chains are in the position of deciding which products and/or companies will have shelf space in their outlets, and are also able to determine the terms and conditions upon which shelf space is made available”.

Positive influence on supplier’s sustainability practices could be achieved via retailer’s engagement into collaborative practices. For suppliers, transition to sustainable operations requires additional investments and incurs variety of risks. Only few European retailers have recognized the importance of supporting suppliers in transition period, rather than just stocking shelves with available green produce. Sainsbury’s has introduced ‘Farm Promise’ scheme to support market transformation towards British sustainable & organic dairy sector. It covers associated conversion costs, guarantees post conversion contracts and ensures price premium for products meeting sustainability standards (Forum for the Future 2008).

During interviews with Swedish retailers, identified collaborative practices were realized only in the form of education and provision of sustainability guidelines when suppliers were about to launch new green products. Relationships with suppliers were also described as collaborative in regard to conducting audits against sustainability codes, but this was again limited to provision of help on what should be done to achieve compliance. The signs of asset-specific investments or ensuring ‘supply chain base continuity’ described by Pagell and Wu (2009) have not been observed in interviews with Swedish retailers so far.

During the interviews, lack of technical competence such as thorough knowledge of food manufacturing practices and product recipes was highlighter as one of the challenges to exercise positive influence over suppliers. At the same time, competence and knowledge about manufacturing processes is considered as critical factor for achieving success with sustainable sourcing initiatives (Hall 2001).

### 10.3 EXERCISING CONTROL OVER RELEVANT ASPECTS IN THE SUPPLY CHAIN

Obviously, including sustainability specifications into agreements with suppliers, what is done both by ICA and COOP, is not enough to ensure compliance with sustainability criteria. To provide guarantee that sustainability requirements are followed by suppliers, retailers approaches in Sweden differ from conducting own audits or using third-party verification schemes.

Respondent at ICA (Personal Communication 2011a) refers to visiting and auditing suppliers in high-risk countries. ICA has established regional sourcing offices in Asia to conduct verification of compliance actually on-site. System with third-party audits has been developed by ICA to verify, that Swedish pork industry complies with animal welfare standards. During interview with COOP (Personal Communication 2011b), the respondent has mentioned the department within organization which is responsible for conducting supplier monitoring and audits. In case of Morot & Annat’s, the store specialized in selling only organic food products, retail works exclusively with KRAV scheme, that is third-party control agency dedicated to verifying compliance with organic standards from cultivation to delivery of food to end-customer.

Recently in Sweden, verification of compliance is also underpinned by governmental regulation, which puts responsibility on retailer to ensure that food products available in-store are labelled correctly. In this situation, the role of third-party verification could be expected to increase. In general, third-party verification appeared to be beneficial, as it reduce sustainability risks, contribute

to building consumer trust, as well as costs of audits are supposed to be carried by suppliers (Havinga 2006).

## 9 CONCLUSIONS

As result of initial study, two theoretical approaches of category management and power perspective have been considered as of particular relevance for investigating sustainability strategies sought by retailers to exercise positive influence and control upstream in food supply chains. As it has been demonstrated, collaborative relationships are neither always effective nor feasible in regard to particular product categories. The question than becomes what leverage mechanisms to affect sustainable sourcing practices are effective in each particular context of risk to TBL and power circumstances.

Sustainable purchasing portfolios suggested by Pagell and Wu (2010) stressed interesting changes to traditional category management model (Kraljic 1983) when companies are pursuing sustainable purchasing strategies. They observed that leverage category of goods have been treated by certain companies in strategic manner, and such 'false' relationship management strategy still allow them to be prosperous. However, sustainable purchasing portfolio model still lacks clear explanation of sustainable purchasing phenomenon:

1. Firstly, it doesn't explicitly address that different organizations would be engaged in various degree of collaboration with suppliers. At the same time, overview of sustainable sourcing practices among European forerunners has revealed that collaborative practices vary in their scope. It could imply financial investments to help suppliers to transform to sustainable products and operations, educating suppliers on sustainability issues, providing assistance during audits in form of advice, ensuring fair returns to farmers in case of fair-trade product ranges etc. These collaborative practices probably require different level of commitment from retailer's, e.g. from substantial asset-specific investments to mere provision of information. In Swedish context, collaborative practices revealed so far are related to education and information provision for suppliers. Such differences in collaborative practices should be further investigated with revealing what contextual realities motivate retail organization to invest into green capacity development of suppliers.
2. Secondly, small companies that lack resources to invest in collaborative relationships where not included into sample of studied organizations, thus their behaviour in regard to sustainable sourcing activities is still unclear.
3. Thirdly, whether sustainable strategies to manage other than leverage product categories would really experience little difference to traditionally suggested strategies is also unclear and lack empirical evidences.

Therefore, further refinement of the sustainable purchasing portfolio is required in case specific circumstances, what would be done via further case study research in particular context of Swedish food retailers. We are particularly interested not only to analyse existing sustainability practices but also to understand the potential of retailers to exercise influence and control upstream in the supply chain, the challenges associated with such endeavours, and the influence of key contextual factors

which may facilitate or thwart attempts at addressing environmental and social aspects in the upstream supply chain.

## 10 FURTHER RESEARCH IMPLICATIONS

For our further study the question arises whether the power relationships in the Swedish food sector can indeed be characterized as a situation where retailers are in a position of buyer dominance or buyer-supplier interdependence.

In Swedish context, the power of retailers to exercise influence toward sustainability practices is limited due to concentration trends in food manufacturing industry. However, existing power regime in retail food supply chains could be generally considered as conducive to influence suppliers to adopt sustainability practices. Two power leverages to exercise the influence has been devised within the frames of this paper: developing private eco-brands and negotiating amount of shelf space available. Further research, with emphasis on specific product categories should be conducted to further explore on the aspects of relative power and associated leverage mechanisms in regard to sustainable sourcing strategies. In that regard surveys among retailers are planned to reveal existing 'objective power circumstances' suggested by Cox power matrix (Cox 2001b).

We will also explore the sustainability practices of smaller players who are more advanced in their sustainability agenda than the leading retailers work with sourcing. We are also interested to understand how buyers who are not in a situation of dominance or interdependence still may pursue sustainability goals in relation to their supply chain and the products that they source.

While the discussion above indicates that inter-organisational collaboration is conducive to sustainability innovation, and that the power context influences the ability of firms to actively engage in collaboration in order to achieve innovation, it seems that it is important here to return to the distinction between the need to trigger sustainability innovations and the need to trigger compliance with sustainability related minimum, or frontrunner, standards. Arguably both will contribute to the overall sustainability performance of the food sector, and arguably both are desirable from a society perspective as well as being important for the food retailers in light of pressure from key stakeholders.

Taking this into account the question arises with regards to the role of standards and third party certification schemes in this context. It appears that the implementation of such standards and the promotion of a wide uptake of such standards, initially perhaps through direct interaction with specific suppliers, may be one alternative route to collaboration in order to move strategic commodities through a transition back towards a situation of true commodities. Only this time it will be a sustainable commodity by definition in the standard. We seek to explore the proposition that standards shift risk and information asymmetry, so that sustainable products may be sourced as commodities thus preventing the need for a collaborative regime in sustainability supply chain management.

## References

- Aragrande, M., A. Segré, et al. (2005). National report Sweden. Quick scan of the food supply chain dynamics, labelling and certification schemes and policies, rules and regulations in the selected EU country. DG JRC/IPTS, EUROPEAN COMMISSION: 82.
- Axel Johnson AB (2009). Axel Johnson annual report 66.
- Bensaou, M. (1999). "Portfolios of Buyer-Supplier Relationships." Sloan Management Review **40**(4): 35-44.
- Bergstrom, K., C. Soler, et al. (2005). "Professional food purchasers' practice in using environmental information." British Food Journal **107**(5): 306-319.
- BIO Intelligence Service (2009). Towards a Greener Retail Sector, European Commission :233.
- BIO Intelligence Service (2009). Towards a Greener Retail Sector, European Commission: 233.
- Bowen, F., P. Cousins, et al. (2001). "The role of supply management capabilities in green supply." Production and Operations Management **10**(2): 174-189.
- Burch, D. and G. Lawrence (2005). "SUPERMARKET OWN BRANDS, SUPPLY CHAINS AND THE TRANSFORMATION OF THE AGRI-FOOD SYSTEM." International Journal of Sociology of Agriculture and Food **13**(1): 1-18.
- Carter, C. R. and D. S. Rogers (2008). "A framework of sustainable supply chain management: moving toward new theory." International Journal of Physical Distribution & Logistics Management **38**(5): 360-387.
- Chkanikova, O. and O. Mont (2010). TOWARDS SUSTAINABLE RETAIL: OVERVIEW OF RETAIL PRACTICES IN EUROPE. The 2nd Nordic Retail and Wholesale Conference Gothenburg: 17.
- CIAA (2009). Data & trends of the European Food and Drink Industry, The Confederation of the Food & Drink Industries of the EU: 24.
- Cox, A. (2001a). "The power perspective in procurement and supply management." Journal of Supply Chain Management **37**(2): 4-7.
- Cox, A. (2001b). "Understanding Buyer and Supplier Power: A Framework for Procurement and Supply Competence." Journal of Supply Chain Management: A Global Review of Purchasing & Supply **37**(2): 8-16.
- Cox, A. (2001c). "Managing with power: Strategies for improving value appropriation from supply relationships." Journal of Supply Chain Management **37**(2): 42-47.
- Cox, A., P. Ireland, et al. (2002). Supply Chains, Markets and Power: Mapping Buyer and Supplier Power Regimes. London, Routledge.
- Durieu, X. (2003). "How Europe's retail sector helps promote sustainable production." Industry and Environment **26**(1): 7-9.
- ETC/SCP (2010). The Role of Retailing in the Move towards Sustainable Consumption and Production. Copenhagen, European Topic Centre on Sustainable Consumption and Production and European Environmental Agency: 67. Unpublished report.
- European Commission (2010). Services on Monitoring Retailers' REAP commitments. Brussels, European Commission: 158.
- European Retail Round Table and EuroCommerce (2010). Retailer's Environmental Action Programme. Brussels, European Retail Round Table and EuroCommerce: 36.
- European Commission (2009a). COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS. A better functioning food supply chain in Europe: 13.
- European Commission (2009b). Europeans' attitudes towards the issue of sustainable consumption and production. Brussels The Gallup organisation and European Commission: 86.

- Fawcett, S. E. and G. M. Magnan (2002). "The rhetoric and reality of supply chain integration." International Journal of Physical Distribution & Logistics Management **32**(5): 339-361.
- Forum for the Future (2008). Retail leadership. What are the hallmarks of a sustainable retail business? . London, Forum for the Future: 42.
- Forum for the Future (2009). Sustainability trends in European retail. London, Forum for the Future: 42.
- Frohlich, M. T. and R. Westbrook (2001). "Arcs of integration: an international study of supply chain strategies." Journal of Operations Management **19**(2): 185-200.
- Gelderman, C. and A. Van Weele (2003). "Handling Measurement Issues and Strategic Directions in Kraljic's Purchasing Portfolio Model." Journal of Purchasing and Supply Management **9**(5-6): 207-216.
- Gold, S., S. Seuring, et al. (2010). "Sustainable supply chain management and inter-organizational resources: a literature review." Corporate Social Responsibility and Environmental Management **17**(4): 230-245.
- Haake, H. and S. Seuring (2009). "Sustainable procurement of minor items - exploring limits to sustainability." Sustainable Development **17**(5): 284-294.
- Hall, J. (2001). "Environmental Supply-Chain Innovation." Greener Management International(35): 105-120.
- Havinga, T. (2006). "Private Regulation of Food Safety by Supermarkets." LAW & POLICY **28**(4 ): 515-533.
- Huang, Y. and P. Huddleston (2009). "Retailer premium own-brands: creating customer loyalty through own-brand products advantage." International Journal of Retail & Distribution Management **37**(11): 975-992.
- ICA. (2011). "ICA tar ansvar." Retrieved 25th March, 2011, from <http://www.ica.se/Om-ICA/ICA-tar-ansvar/Etisk-handel/>.
- Johnson, M. (2004). "Marks & Spencer implements an ethical sourcing program for its global supply chain." Journal of Organizational Excellence **23**(2): 3-16.
- Johnson, M. (2004). "Marks & Spencer implements an ethical sourcing program for its global supply chain." Journal of Organizational Excellence **23**(2): 3-16.
- Jones, P., D. Comfort, et al. (2005a). "Corporate social responsibility: a case study of the UK's leading food retailers." British Food Journal **107**(6): 423-435.
- Kogg, B. (2009). Responsibility in the Supply Chain: Interorganisational management of environmental and social aspects in the supply chain - Case studies from the textile sector. IIIEE. Lund, Lund University. **PhD**: 262.
- Kraljic, P. (1983). "Purchasing Must Become Supply Management." Harvard Business Review **61**(5): 109-117.
- Mentzer, J., W. Dewitt, et al. (2002). "Defining supply chain management." Journal of Business Logistics **22**(2): 1-25.
- Olsen, R. F. and L. M. Ellram (1997). "A Portfolio Approach to Supplier Relationships." Industrial Marketing Management **26**(2): 101-113.
- Pagell, M. and Z. Wu (2009). "BUILDING A MORE COMPLETE THEORY OF SUSTAINABLE SUPPLY CHAIN MANAGEMENT USING CASE STUDIES OF 10 EXEMPLARS." Journal of Supply Chain Management **45**(2): 37-56.
- Pagell, M., Z. Wu, et al. (2010). "THINKING DIFFERENTLY ABOUT PURCHASING PORTFOLIOS: AN ASSESSMENT OF SUSTAINABLE SOURCING." Journal of Supply Chain Management **46**(1): 57-73.
- Personal Communication (2011a). Maria Smith. Chef Miljö & Socialt ansvar at ICA Sweden. Telephone Interview. 28th February. Lund.
- Personal Communication (2011b). Mikael Robertsson. Miljöchef at COOP Sweden. Telephone interview. 3rd March. Lund.

- Personal Communication (2011c). Environmental Manager at discounter retail in Sweden. Telephone Interview. 14th March. Lund.
- Preuss, L. (2005). "Rhetoric and reality of corporate greening: a view from the supply chain management function." Business Strategy and the Environment **14**(2): 123-139.
- Sandberg, E. (2010). The retail industry in Western Europe : Trends, facts and logistics challenges Linköping, Linköping University, Institute of Technology: 58.
- Seuring, S. and M. Muller (2008a). "From a literature review to a conceptual framework for sustainable supply chain management." Journal of Cleaner Production **16**(15): 1699-1710.
- StorebrandInvestments (2003). Retail Industry Overview, StorebrandInvestments: 9.
- SustainableDevelopmentCommission (2008). Green, Healthy and Fair. A review of government's role in supporting sustainable supermarket food, Sustainable Development Commission: 110.
- Tukker, A., G. Huppes, et al. (2006). Environmental Impact of Products (EIPRO): Analysis of the life cycle environmental impacts related to the final consumption of the EU-25. Seville, JRC/IPTS/ESTO: 139.
- UNEP (2005). Talk the walk: advancing sustainable lifestyles through marketing and communications. Paris, UNEP: 52.
- Vachon, S. and D. Klassen Robert (2008). "Environmental management and manufacturing performance: The role of collaboration in the supply chain." International Journal of Production Economics **111**(2): 299-299.
- Van Weele, A. (1994). Purchasing Management: Analysis, Planning and Practice. London, Chapman & Hall.
- Williamson, O. (2008). "OUTSOURCING: TRANSACTION COST ECONOMICS AND SUPPLY CHAIN MANAGEMENT." Journal of Supply Chain Management **44**(2): 5-16.
- Wilson, D. (1995). "An integrated model of buyer-seller relationships." Academy of Marketing Science. Journal **23**(4): 335-346.
- Yates, L. (2008). Green grocers. How supermarkets can help make greener shopping easier, National Consumer Council: 30.
- Ytterhus, B. E., P. Arnestad, et al. (1999). "Environmental initiatives in the retailing sector: an analysis of supply chain pressures and partnerships." Eco-Management and Auditing **6**(4): 181-188.