Restructuring Food Supply: Sustainability and Supermarkets

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Abstract

Supermarkets have become the central locations for selling and buying food and they seem to have become obligatory passage points for sustainable foods as well. Even though still specialised shops and dedicated distribution mechanisms exist, most 'sustainable foods' are nowadays sold via supermarkets. Mainstreaming sustainable food provisioning therefore requires the inclusion of supermarkets (Oosterveer et al., 2007).

This paper will discuss different supermarket strategies towards sustainable food provision with particular attention to consumer involvement. Many retailers have subscribed to the importance of sustainability but they differ in:

- if and how they share this with their consumers;
- their understanding of sustainability and food;
- the marginal or structural integration of sustainability in their overall strategy;
- their passive or pro-active stand in relation to other actors in the system of provision

This paper will review different retailer strategies in different, national, contexts (UK, Germany, and the Netherlands) and conclude by confirming the key position supermarkets have in transitions towards sustainable food provision. Their contribution should however not be approached in isolation but as a key node in a chain of systems connecting food production and consumption. This includes in particular the supermarket floor where provider and consumer logic meet each other and where shared understandings of sustainable food are (re-)created.

Introduction

In just a few decades, supermarkets have become central locations for selling and buying food (Burch and Lawrence, 2007; Lang, 2003). In the U.S., the EU (Dobson et al., 2003), but also increasingly in developing (Reardon and Hopkins, 2006) and transition countries (Dries et al., 2004) supermarkets dominate food retail. The spread of supermarkets is the consequence of a combination of different dynamics, including rising incomes, urbanisation, more female participation in the labour force and the desire to emulate Western culture, accelerated by media and advertising (Traill, 2006). This rise in supermarkets' size and number, in combination with the globalisation in food provision has meant that supermarkets have become the obligatory passage points for most food sales (Konefal et al., 2005). Also most 'sustainable foods' are nowadays sold via supermarkets, even though dedicated shops remain and farmers' markets and other direct distribution mechanisms promoting sustainable food exist as well. For instance, countries where most organic products are sold via supermarkets tend to be the countries where the organic market shares are the highest as well (Willer and Yussefi, 2004/2007).

The spread of supermarkets is fundamentally changing the organisation of contemporary food provision. Supermarkets have a profound impact on farming, food businesses, other retailers, trade in processed food products and on the consumer in general (Traill, 2006). Particularly the central role these retailers have taken up in the coordination of food supply chains raises the question on what role(s) they can play in increasing the sustainability of contemporary food provision. Without support from supermarkets and connection with this system of provision mainstreaming the provisioning of sustainable foods seems impossible (Oosterveer, et al., 2007). The questions then are how retailers (can) engage with increasing the presence of sustainable food on the supermarket shelves and how they link this transformation with consumer involvement.

In order to further analyse these questions I will briefly present some background information on the growth of supermarkets in Europe and their role in the provision of food, followed by a review of different strategies applied in increasing the sustainability of food provision via supermarkets. The analysis of these strategies will be done against the background of transition theory, an increasingly popular perspective on socio-technical system's change towards sustainability. This conceptual framework will be presented briefly after the next section which summarises some of the key transformations supermarkets have been going through. In the concluding section, I will discuss some of the main findings resulting from this review.

The growth of supermarkets.

The supermarket concept was first introduced in the US in 1916, but it was only after WWII that the phenomenon really spread worldwide. After the US in the 1950s, supermarket growth in Western Europe really took off in the 1960s and by the 1990s they were responsible for the large majority of grocery sales. Expansion of the model continued and spread to other continents as well (See Table 1).

Table 1. Projected grocery sales by region (net m. US$)

Region	2009	2013	Growth
World	6,251,731	8,106,114	30%
Africa and Middle East	504,708	721,560	43%
Latin America	668,977	933,672	40%
Asia and Oceania	2,385,085	3,228,574	35%
Europe	2,007,134	2,410,369	20%
North America	685,827	810,939	18%

Source: Planet Retail

The growth of grocery sales via supermarkets was accompanied by an increase of scale and a concentration into a few very large global retailers. By 2007, the largest ten retailing companies accounted for 40% of all groceries sold by the top 100 retailers in 2007 (US$1.8 trillion). (See Table 2).

Table 2. Global Top 10 Food Retailers

Rank	Company	Food Sales (2007) US$ millions	Country of origin
1	Wal-Mart	180,621	US
2	Carrefour	104,151	France
3	Tesco	72,970	UK
4	Schwarz (Lidl)	58,753	Germany
5	Aldi	55,966	Germany
6	Kroger	52,082	US
7	Ahold	50,556	Netherlands
8	Rewe Group	49,651	Germany
9	Metro Group	49,483	Germany
10	Edeka	45,397	Germany

Source: ETC Group, 2008

Wal-Mart is the largest retailer by far, operating in 13 countries with totals grocery sales (including food) of US$379 billion and over 2 million employees. This retailing company is also the largest company worldwide and dwarfs the largest food processing company Nestle which had a total sales of nearly US$90 billion in 2007. Interestingly, the world's top ten food retailers includes two US-based companies, but eight Europe-based ones. More than in the US in most Western European countries the majority of grocery sales is realised via only a few (two to five) retailing companies. Some companies concentrate on the domestic market, but others have a globalisation strategy (Coe and Hess, 2005) among which Carrefour is a prime example. Carrefour currently operates over 15,000 stores, with some 490,000 employees. Carrefour has shops in more than 30 countries in Europe, Latin America and Asia, whereby France only accounted for about half of the company's sales. This supermarket chain processes over three billion checkouts per year. The company operates in diverse retail formats of which 59% hypermarket, 23.5% supermarket, 9.7% hard discount, and 7.7% cash and carry. Early 2005, still Carrefour planned to open 70 hypermarkets, including 15 in China, 7 in Brazil, 6 in Colombia, 5 in Indonesia, 4 in Thailand and 3 in Poland. (Aberdeen Group, 2008; ETC-Group, 2005).

The expansion of retailing companies into other countries can be considered the result of three interlinked processes: globalisation, market liberalisation and pro-corporate regulation (Lawrence and Burch, 2007). The globalisation of food provision clearly put large retailers in an advantageous position because they are able to coordinate international supply, to profit from cost-price differences and to make use of their brand names to attract customers in other than their home country. Market liberalisation has allowed retailing companies to merge with existing companies and to branch out to other product lines, such as finance and medicines. Pro-corporate regulation meant de-regulation, especially where governments withdrew from an active, interventionist, policy on agriculture and food, and re-regulation through private standards.

In the food supply chain, supermarkets have taken up central, coordinating roles (Gereffi et al., 2005), shifting the balance of power from the producing end of the chain to the retailing and consuming end. 'The coordination of retail operations along the supply chain is further enhanced, as competitive models of supply chain relationships give way to co-operative models and the establishment of 'strategic partnerships' between the retailer and a supplier, in order to generate efficiencies for all supply chain actors' (Lawrence and Burch, 2007: 5/6). Supermarkets increasingly no longer buy what is available on the market but determine what must be supplied to them and the terms and conditions under which this may be done. Retailers want to supply quality food and require their suppliers to demonstrate that systems of quality management have been put in place (Flynn et al., 2003). This position of control allows retailers to show consumers that their choice of retail outlet will 'affect the type and the constructions of quality purchased and consumed' (ibid.: 39). Retailers are emerging as gatekeeper of food quality standards, but seem to use this position selectively and concentrate in particular on the safety of food. This emerging role of retailers as an 'institutional authority' (Dixon, 2007) is 'janus-faced' (Harvey, 2007) as it combines power relations with consumers downstream and with the different (economic) actors upstream, each with their own dynamics. Supermarkets are strongly influencing production as well as consumption practices beyond their traditional responsibility for distributing food. Examples of retailer influence upstream are the development of own brand products and the setting of specific safety, quality, and environmental standards for farmers and food manufacturers. Downstream towards consumers, supermarkets may engage in introducing new products, including convenience foods ('home-ready meals') and engaging in 'eatertainment' (cooking classes, fancy magazines free-of-charge and handing out unfamiliar food products in the shop). Consequently different configurations emerge, whereby each has their particular spatial presence and dynamics, so there need not be one uniform process of globalisation in the domain of food retailing (Harvey, 2007).

Corporate retail power can be employed in different ways and is not simply the direct translation of market share in political power. This power has instrumental, structural and discursive dimensions (Clapp and Fuchs, 2009). Instrumental power is the use of resources to change the outcome of decision-making processes .There are four levels in this dimension of retail power (Clarke, 2000); at the broadest level there is the ability of the retailers to organise supply (through vertical integration and through standards imposed upon suppliers. The second level relates to the concentration into a limited number of retail corporation and the third level concerns the operation and innovation of 'ways of doing things', or the internal operation of the shop (marketing and shop formats).[1] The fourth level addresses the power that influences the location of the shop because this is attracting (particular categories of) consumers. The structuralist dimension stresses the broader influence corporate actors have over setting agendas and making proposals. A recent type of structural power in the context of globalisation is corporate retailing actors making governance decisions themselves (labelling and standards). A final dimension is discursive power, where corporate actors are able to frame an issue and derive political legitimacy.

There is no room to elaborate these different dimensions of retail power much further. It may nevertheless be useful to distinguish two extremes in economic power. One extreme case is the distanced 'distributor model' (Harvey, 2007) (c.f. Wal-Mart and Aldi) of the retailer-distributor, optimising economies of scale, just-in-time distribution and revolutionising the use of information technology, focussed on increasing their market share through price competition. The other extreme is deep engagement, either upstream or downstream or both to establish a flexible and rapid

[1] The next phase is becoming evident in the 'hypermarket', a large-scale complex which combines the features of a supermarket, a department store and specialty stores, which allows people to engage in 'one-stop' shopping. Top-up items may be purchased at smaller convenience outlets located at strategic locations - which are themselves often part of a larger supermarket chain (Lawrence and Burch, 2007).

co-innovation dynamics able to secure the differentiation of own-brand food products along a wide range of different prices and qualities, the ‘rooted retailer model’ (Harvey, 2007), of which Tesco is considered a prime example.

Corporate retailers play a central role in promoting their vision of quality in food and its provision to their consumers (Hughes et al., 2008). However, defining food quality, including its sustainability dimensions is not a one-sided top-down process from supermarket to consumer but a process of interaction where different social actors engage in with their own understandings of food quality. It is particularly at the supermarket floor where these definitions and standards are achieved (Oosterveer et al., 2007). The supermarket floors are particular ‘locales’ that (re)structure people’s life paths in time and space in relation to food consumption. Buying food, like other exchange relations, is ‘seldom an ‘unembedded’ material commodity transaction. Rather, it is a richly symbolic activity which can have important emotional consequences quire apart from any material changes which may result’ (Crewe, 2000: 283/4). Shopping for food is a (mundane) social practice and not an individual commercial transaction. [2] Retailers, and consumers, are therefore engaged in multiple ways in (re)constructing this social practice.

So far, we have shown that food provision in Europe is dominated by supermarkets at present in and therefore the question is how they can be part of increasing the sustainability of food in the future.

Transition thinking

Retailers may be strong and powerful actors, but they are also integrated in large and complex socio-technical systems. Increasing sustainability in food provision may occur through incremental innovation and system optimisation, but many claim that large and radical jumps in efficiency are necessary to respond to the urgent environmental challenges. However, complex socio-technical systems such as global food provision, are characterised by inertia, or lock-in effects, and can not easily become more environmentally friendly. Changing complex systems signifies a multifaceted process involving different social actors and technological innovations, a co-evolution of the social and the technological. Transition management theory is developed as an analytical tool to identify and program such changes (Geels, 2005/2006).

Transitions involve simultaneous changes in policy, social practices, infrastructures, technical products and management practices, symbolic meanings, etc. Innovations in socio-technical systems therefore mean the co-evolution of a number of related elements, changes in the supply side (e.g. technology, knowledge, industry, structures) *and* the demand side (consumer preferences, cultural meanings, infrastructures), a wide range of actors, and long-term processes (evolving over decades) (Geels, 2006). Transition theory draws attention to the multi-layered context of socio-technical systems which are stabilised by *regimes* that coordinate the activities of social actors, encompassed by the macro socio-technical *landscape* that is

[2] Price difference between sustainable and less sustainable food products alone cannot explain why the sales of more sustainable food sometimes lag behind expressed consumer concerns. It is key to realise that the availability and presentation of these products in the supermarkets are very relevant as well (Baltussen et al., 2006).

beyond the direct influence of regime and niche actors. The stabilising force of regimes provides orientation and co-ordination to the relevant social actors, thereby creating inertia, lock-in and path-dependency in existing systems. It is therefore at the micro-level of technological *niches* where deviation from the rules in existing regimes becomes possible.

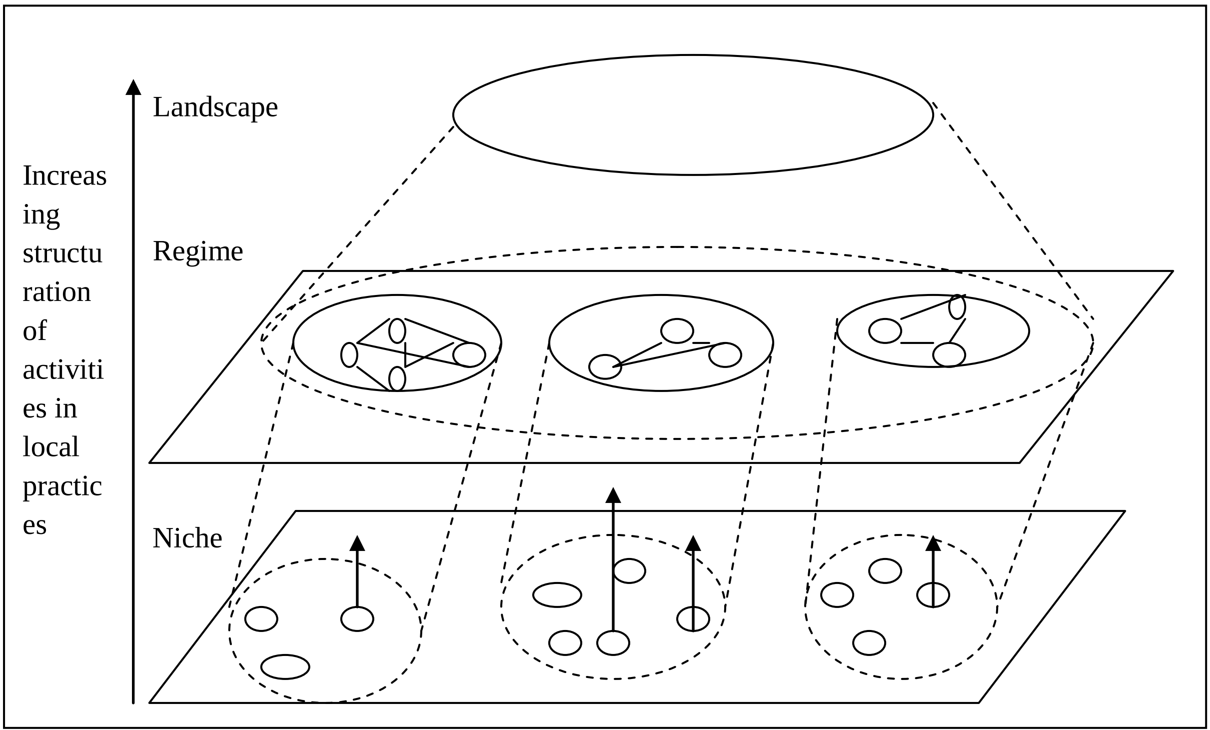


Figure 2: transition model (based on (Geels, 2006))

The relationship among these three concepts can be understood as a nested hierarchy, meaning that regimes are embedded within landscapes and niches within regimes (see Figure 2). Niches provide the seeds for change because here actors develop novelties to solve the problems of existing regimes, which is not easy because the existing regime is entrenched in many ways. Novelties in niches may emerge regularly and they may shape a transition at the higher socio-technical regime level over time through learning and adaptation. Transitions therefore occur only under favourable circumstances at the regime and landscape level. The match between improved configurations and practices internal within the niche and an external window of opportunity at the regime level, determines the success of innovations. Encouraging this match is called strategic niche management, through the planned creation and support of novel 'socio-technical' niches, under an explicit multi-level perspective. The knowledge created by these niche experiments can contribute to the subsequent transformation of the relevant socio-technical systems (Smith, 2003). Nevertheless, transitions are not and cannot be planned in a rational manner, because they emerge as actors navigate their way through multiple uncertainties creating multiple trajectories of transition (Geels, 2004).

The various initiatives towards more sustainability in food provision can be considered niche innovations. The next question is therefore if and how these niche innovations will result in a transition at the regime level, and whether we can witness a sustainable global food regime in the making.

Sustainability, Food and retailers.

Supermarkets became engaged in organic food provision since the 1980s when UK retailer chains Tesco and Sainsbury first stocked these products. First only in small numbers but 20 years later the conventional retail outlets in the UK command over 80 percent of all organic food sales (Lyons, 2007). Many retailers have nowadays subscribed to the importance of sustainability (of food) in their corporate strategy and in their provision policies, exemplified in the presence of organic, fair-trade, and local foods in their shop. Their strategy towards increased sustainability can be organised with consumer involvement, or 'behind the consumers' back'. An example of this second approach can be found at Wal-Mart. Wal-Mart, the largest retailing company worldwide, decided in 2005 to completely reorient its strategy on sustainability. Before, the company was heavily criticised by environmental activists for their weak performance in this domain, so now the company revised its orientation and now claims on their website that: 'Wal-Mart's environmental goals are simple and straightforward: to be supplied 100 percent by renewable energy; to create zero waste; and to sell products that sustain our natural resources and the environment'[3]. The company has radically changed business approaches in areas including supply chain management, logistics and serving rural areas. This strategy is not oriented to engage the consumer, but to serve the customer by providing high quality, low-cost products in a responsible and sustainable manner. The company claims that about 90 percent of the environmental impacts occur in the supply chain. On the other hand, retailers such as Whole Foods Markets (Johnston, 2008), invite consumers actively to buy in to their strategy and join their common struggle to create a more sustainable future: 'engage with the local community, protect the environment, distribute the food of local farmers, promote employee well-being, and service customers' desire for delicious food they can feel good about' (ibid: 248). Customers have to become "advocates for whole foods".

Overall, actions towards sustainability taken by supermarkets are primarily seen to have been driven by consumer concerns and demands around climate change and the opportunity to capitalise on financial savings. Consumers, NGOs and various ethical consumption campaigns can contribute to significant changes in the organisation of production and trade activities. The organisation of present-day food provision is increasingly affected by 'ethical values circulating between spheres of consumption, retail and production, as well as civil society and the media' (Hughes, et al., 2008). Brand and reputation, competitor action, the desire to pre-empt legislation and pressure from NGOs have also played a role in encouraging supermarkets to make changes to the way they operate. Retailers may adopt environmental standards to attract concerned customers and/or to reduce costs, as for example reducing energy-use also has a considerable economic impact (Iles, 2007). European retailers consider providing consumers with products that meet consistent quality and safety standards that go beyond the minimum legal requirements essential to build their reputation and secure their market position. Private standards are the main instrument to achieve this (Fulponi, 2006). Food safety and quality are the most important standards, but social and labour standards and, animal welfare and environmental standards are also considered relevant by retailers and are expected to become even more important in

[3] http://walmartstores.com (visited 11 February 2009).

the future. Thus, definitions and dimensions of sustainability should not be considered homogenous, standard and universal, but dynamic, evolving and depending on specific contexts. Culturally-influenced understandings of sustainable food consumption should be coupled with accounts of knowledge transfer/translation and embedded in specific network, in order to understand how ethical concerns are translated into forms of responsible coordination through retailers (Hughes et al., 2008).

The areas where most progress seem to have been made until now are energy-use, and food and packaging waste. Nevertheless not all supermarkets in all countries follow similar strategies. Lyons (2007) distinguishes three strategies:

- maximum strategy with over 400 organic products on sale promoted on the basis of its quality, health and environmental attributes. Using organics in promotion and taking up educational and advocacy roles
- basic strategy with between 50 to 200 organic food products based on value and price; providing little support to consumers through information, education etc.
- minimum strategy with less than 50 products, mainly non-perishable dry goods. Minimal staff knowledge and little or no commitment.

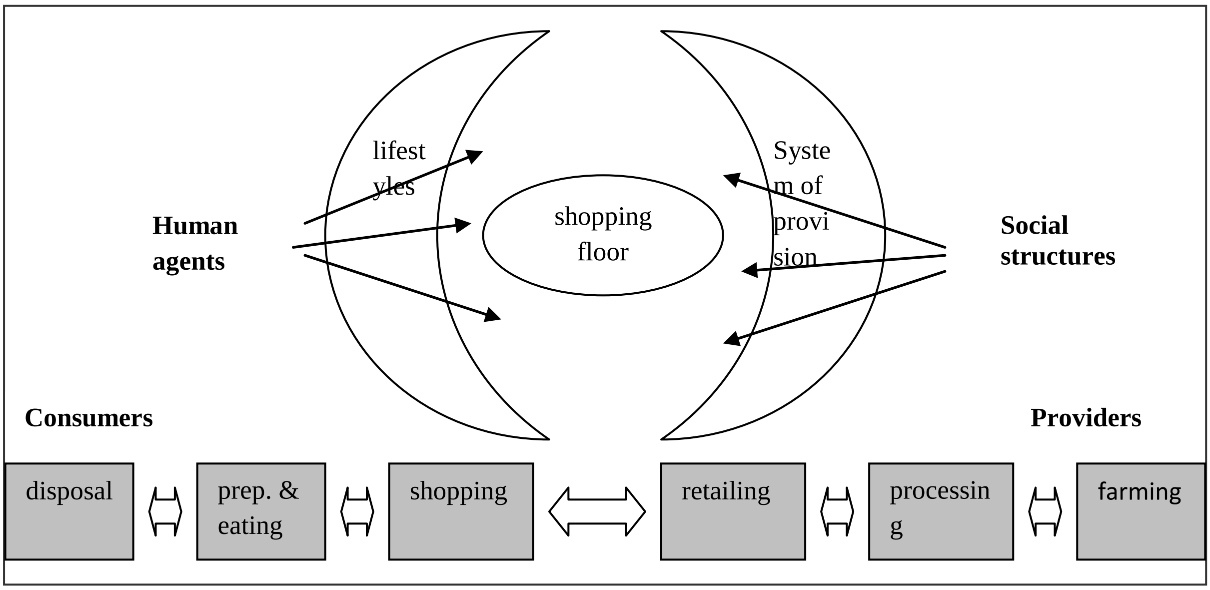
Corporate (social) responsibility (or CSR) is seen as an important driver in changing supermarket practices, whether inviting active consumer participation or behind their backs. As the Aberdeen Group (Aberdeen Group, 2008: 2) suggests companies enhancing overall corporate responsibility 'reap impressive gains in competitive advantage via lower energy, transport/logistics, and waste disposal costs as well as remarkable advantaged outcomes related to customer loyalty, new customer acquisition, customer retention and satisfaction, and preferred supplier status. Leading companies are turning to sustainability initiatives as a way of increasing safety, quality, and control while driving down costs and building customer and stakeholder loyalty, awareness, and capacity.' Cost reductions resulting from CSR are immediately reflected in the yearly financial reports, but the other impacts are less visible. Companies are trying to capitalise on the non-financial results through annual reports, websites and other forms of publicity. One often applied tool in objectifying the retailing company's environmental performance is certification, for instance through ISO 14001.

An integrated LCA (Life Cycle Analysis), mapping the environmental impacts throughout the entire supply chain, would be necessary to substantiate claims about environmental sustainability of food products, but this is often beyond the capacity of one actor in the supply network. Consequently, actors may chose to claim only specific environmental improvements, or make only situational claims (Bhaskaran et al., 2006).

Sustainability transitions in food supply: roles of retailers

Supermarkets can be considered the central link in the larger chain of socio-technical and economic systems connecting food from its primary production to its final disposal. It is at this consumption-junction that the system of provision actually meets the consumer, the retail shopping floor therefore is the locale where sustainability of food is (or not) instantiated. See Figure 2.

Figure 2: the consumption junction



These interactions between providers and consumers are embedded in wider socio-technical regimes. Analysing prospects for environmental change in food provision therefore means more than considering consumers' attitudes or willingness to pay or designing regulations to force providers to change their policies. This requires analysing opportunities for change within these wider regime-contexts. Contrary to transition theory I want to argue that not only niche-innovations can ultimately lead to system change, but that also other levels, including the system-level, can generate change. Acknowledging this possibility, I will elaborate the potential contribution by supermarkets in greening food provision by comparing three different countries: UK, Germany and the Netherlands. These three countries were selected because they exhibit different supermarket regimes as well as different strategies for environmental change.

Case 1: United Kingdom

Contemporary food retailing in the United Kingdom (UK) has several distinctive features. A very large share of the market is held by the top four retailers, the country shows the highest level of own-label sales of any country in the world, the highest level of competition of chilled ready-meals, and a markedly higher occurrence of once-a-week/one-stop shopping (Harvey, 2007). The top food retailers in the UK, especially Tesco and Sainsbury, have characteristically embraced a wide price-quality differential in their range of products. Within any product line, there are a number of choices available, ranging from 'economy' at the bottom, through two or three different quality and price differentiated products, to top-of-the-range products whose selling point is a distinctive retailer quality brand (ibid.). UK consumers are very loyal to a particular retailer for the bulk of their shopping.

Another striking feature of the British configuration of food consumption, production, exchange and distribution organised around retailing is the deep engagement of retailers both into consumer markets downstream, and in production and distribution processes upstream (Harvey, 2007). "The retailer is much more an orchestrator and conductor than a passive distributor, and operates within a matrix of asymmetric economic power relations" (ibid.: 64). Production, innovation, quality and packaging is controlled by the front-end retailer. In the last two decades, intermediaries such as wholesale markets have been swept away and new distribution systems have accelerated the route from farm to store from a matter of weeks to same-day delivery in many instances. Long-term exclusive relationships between retailers and producers allow the establishment of procedures for pest control, growing regime and quality control, but also for very rapid co-innovation and experimentation. This allows supermarkets to respond rapidly to fashions among food consumers and replace the food processing companies in many instances. “To launch a new product, a branded manufacturer invests in research and development, marketing and promotion, and is necessary both more conservative and much slower in moving from concept to delivery. A large branded manufacturer thus might produce five new products per year. The own-label manufacturer, with no costs of advertising its products, and with certainty of market access, can afford to produce short-life, innovative and fashion-driven foods, which are at the forefront of consumer demand. As a result, an own-label manufacturer may typically introduce up to 1,000 new products per year” (Harvey, 2007: 61/2).

More than in other countries, supermarkets in the UK have taken a lead role in changes towards greening food provision. It is retailing companies that are setting environmental standards in the supply chain and may raise them in response to signals emanating from consumers. For example, retailers in the UK refused to stock food products containing GM-ingredients and decided to separate non-GM-ingredients throughout the supply chains for their own-brand food products (Oosterveer, 2007). Another example is Tesco’s carbon footprinting scheme, which was initially developed for 20 goods (2008), including several food products, and announced for all 70,000 products stocked on the supermarket shelves. In stead of simply calculating “food miles”, this label expressed the greenhouse gases released over the lifecycle of the product in terms of grams of carbon and was developed in collaboration with the Carbon Trust.[4] Five of the seven leading UK food retailers have become members of the UK Ethical Trade Initiative (2006) and thereby subscribed to its code of labour conduct (Hughes, 2007). Since the early 2000s, UK retailers have also become major outlets for the sale of Fairtrade products. ‘The four UK supermarket chains leading the way in terms of fair trade sales and commitment to supporting the movement are the Co-op, Sainsburys, Tesco and Waitrose, all of whom publicise information and policy statements on fair trade’ (Hughes, 2007: 184). Supermarkets have also acquired a central position in the distribution of organic food and the largest share by far is sold through their channels (Torjusen et al., 2004). These different initiatives taken by retailing companies signal a growing trend towards greening food provision where UK government authorities play hardly any role. NGOs are involved but mainly by monitoring their performance. NGOs seek to rank supermarkets according to environmental criteria and supermarket companies repeatedly react on these performance lists published on websites by including even stricter environmental performance criteria, such as reducing the number of pesticides accepted in the production process beyond the official regulations (Lang and Barling, 2007).

An interesting case on the role of UK supermarkets and the greening of food provision is the ‘Race to the Top’, which ran from 2000 to 2003. In this project retailers were actively engaged in developing common sustainability indicators for food. This was a project initiated by an alliance of farming, conservation, labour, animal welfare and sustainable development organisations in the UK to track the social, environmental and ethical performance of UK supermarkets and catalyse

[4] One recent inclusion was the carbon footprint of milk, report in August 2009.

change within the UK agri-food sector and beyond. By identifying and promoting best practices by supermarkets, creating benchmarks, the project would point to key issues for public policy, consumers, investors, retailers and campaigners. It would also provide objective data and analysis. Seven groups of indicators were determined: environment, producers, workers, communities, nature, animals, and health. An advisory group of independent experts offered advice and secured quality control (Fox and Vorley, 2004). Despite initial widespread interest from the UK retailers, their commitment disappeared by the time the first public release of results (their individual scores on the indicators) were due and only Co-op, Safeway and Somerfield remained involved in the project (ibid.). In the final report, the project coordinators concluded that the supermarket sector was 'consumer-oriented in the extreme (which) has reached a point at which it is in danger of crowding out the interests of some other stakeholder groups' (ibid.: vi). Suppliers' interests and non-consumer related social and environmental impacts, for instance, run the risk of being drowned out in these debates and strategies. Generating change on issues that are not automatically in line with supermarkets' perceptions of consumer desires becomes challenging and therefore requires a more robust role for the state, according to the organisers.

However, the UK government is generally considered not to play an important role in pressuring supermarkets to address sustainability issues. Except for some public campaigns on climate change, its seems the UK government has persistently chosen for a hands-off approach when it comes to increasing sustainability in food provision (Jones et al., 2006). There has been very little leadership from the government, becoming very visible in the lack of consistency between different branches of the government, lack of a clear strategy, lack of positive examples in the government's own behaviour, and a failure to address the structural causes of unsustainability in the retailing sector.

Overall, the UK case shows in particular how retailing firms can take the lead in greening food provision.

Case 2: Germany

Compared with the UK, the situation in Germany is rather different. Germany exhibits large contrasts in its food retailing. On the one hand, its supermarket retailers are strongly characterised by a price-discounting market, relying on economies of scale, and with their own-label produce (where it exists) concentrating on bargain brands. These supermarket retailers can be further divided in three groups. First, the centralized concerns (Metro, Tengelmann, Aldi, Lidl etc.), which also operate on international level. Second, the groups of cooperatives, operating internationally (c.f. Rewe) or nationally (c.f. Edeka). Third, the smaller nationally or regionally operating branch firms (c.f. Tegut) (Spiller and Gerlach, 2006). On the other hand, there is a plethora of small retail outlets promoting traditional quality, green alternatives and local produce, with strong political support (especially from the Green Party). There is also a powerful organisation of farmer small-holders, closely linked to the Christian Democratic Union (Harvey, 2007).

Transition to more sustainable food provision started in Germany early 2001 when the BSE-crisis took the country by surprise (Oosterveer, 2002). It was considered the bankruptcy of the conventional agri-food system in the country, but it was not consumers or retailers who were the main drivers for change but the national government. The German authorities had always been intensively involved in securing food safety, but this had lost much of its effectiveness through globalisation. The BSE-crisis forced the government to engage again. The Ministry of Agriculture was taken given into the hands of the Green Party and after changing its name into Ministry for Consumer Protection, Nutrition, and Agriculture, proposed a radically different system of food provision (Gerlach et al., 2006). Food quality became the central goal of consumer policy in the new Ministry. Food safety, consumer protection, and sustainable development were the new points of orientation. The Ministry intended to increase the market for organic food from three to 20% in 10 years. and with the help of a mix of new institutional arrangements they forced the food sector to respond to food safety challenges.

The policy instruments applied were mostly oriented towards motivating different actors to move toward more sustainable food provision and very few hard, legal tools were applied due to the complexity of agricultural and food policy making, notably limits set by the Common Agricultural Policy of the EU. Retailers were offered training- and extension programmes to promote organic food and market research was made available to all interested societal actors. Furthermore model regions were selected to create examples for regional food provision based on multi-functional agriculture and a quality label for conventional agriculture was introduced (Gerlach et al., 2006).

The organic food market had remained a niche market for many years with its own (mostly small-scale) specialised retailers spread across the country. The changes early 2000s, however, pushed the large retailing companies into the provision of organic food products in their shop. They had supplied organic food products on a small scale (1 – 2% of their total turnover (Spiller and Gerlach, 2006)) while the discounters ignored these products altogether. Now they started to store much larger quantities and declared ambitious plans to increase the share of organic food products in their stores, for instance Lidl mentioned an ambition level of 20% (Spiller and Gerlach, 2006). Still the specialised shops occupy an important position in the German market for sustainable food (Helmle, 2004).

Germany clearly offers the case of a regime-change in food provisioning, not through niches but through radical changes at the system-level by a system-actor par excellence, the national government.

Case 3: The Netherlands

The Netherlands is home to one of the world's largest retailers (see table 1), Ahold (known in the Netherlands through their Albert Heijn shops). Ahold, a private company, is the largest Dutch retailer and covers a broad range of the market with a considerable contribution from own-brands, balancing between its image of higher end of the market and provider of a broad range in price and quality. Next is Schuitema Corporation operating under the C1000 formula which is the fastest growing chain in the Netherlands. C1000 occupies the middle range of the market and is successful through its rapid translation of national and international developments into local contexts. International retail corporations operating in the Netherlands are Aldi and LIDL, while other supermarket formulas are the cooperative buying association 'Superunie' which covers some 1600 shops oriented on the local/regional markets (including Jumbo and Spar) and the Sperwer Holding, an organisation servicing independent member-entrepreneurs from local supermarkets (PLUS and Spar), operating at the top end of the market, Laurus corporation operating under the Super de Boer formula (middle range), and the collaborating Dirk van den Broek supermarkets (cheap end of the market: price-fighters).

Three purchasing combinations (Albert Heijn, Superunie and Schuitema) are dominating the Dutch market for fresh fruits and vegetables and moreover seem to collaborate increasingly more closely over the years. The auction system which organised distribution of fresh fruits and vegetables in the Netherlands traditionally has rapidly given way to direct sales and contracts between producer and retailer (mostly organised in the purchasing combinations mentioned above). Currently only 5% of all fresh vegetables is sold through auctioning (Bunte, 2009). One important impact of this change is that over the last 10 years the margins between the buying- and the selling price has increased generating higher profits for the retailers and moreover that price-rises are more rapidly translated in higher consumer prices than decreases in lower ones (ibid.).

Dutch supermarkets are generally considered laggards in greening food compared to other Western European countries, which is mostly explained by their focus on price competition. The Dutch retailer Albert Heijn claims to include sustainability throughout the corporate culture, but not to bother consumers with it. The company states that Dutch consumers simply do their shopping for food, looking for quality, safety and taste, and are not interested to read labels about particular sustainability performance (Dagevos and Horlings, 2004). The main drivers in the Netherlands for increasing the sustainability of food provision are therefore not the supermarkets nor the government, but rather the NGOs. During the 1980s Albert Heijn used a green logo for a number of its own-brand articles. This strategy was seriously criticised by NGOs and in the media because of its limit to own-brand articles and the arbitrariness and lack of clear criteria in applying the logo. Albert Heijn was forced to withdraw this policy is now applying more widely known standards and logos such as organics, but still as a sub-category of its own-brand articles (‘AH-biologisch’) (CREM, 2002). A recent example of environmental change in Dutch supermarkets has been an NGO-campaign against white veal. The animal-rights NGO ‘Wakker Dier’ claimed that producing white veal requires animal unfriendly practices: the calves have to suffer from anaemia due to feeding them unhealthy food in order to produce this kind of meat. Between September 2008 and March 2009 this NGO ran a campaign to request supermarkets to end the sale of white veal and in the end they received commitments from nearly all supermarkets (source: several newspaper articles). This was a successful campaign which copied previous campaigns on eliminating the sale of eggs from battery chickens. Another example is the sustainable retail yardstick developed by a mainstream NGO (Korbee, 2008). The score on this yardstick is simply based on counting the number of sustainable (organic and fair-trade) products available on the shelves in supermarkets. The numbers for the different retail chains are compounded and the scores published on the internet. This simple tool has nevertheless a considerable impact on the green image of different retailers as the list receives extensive media-coverage and retailers feel obliged to respond and explain their score.

Conclusions and discussion

Acknowledging the central position supermarkets take up in present-day food provision, this paper showed they also play a key role in transitions towards increased sustainability in this domain. The examples from the UK, Germany and the Netherlands highlight some of the steps supermarkets have taken in increasing the sustainability of the food products on sale and on the diverse roles retailing companies play in these processes of change, in relation with governments, NGOs and consumers. This overview leads to a number of issues which will be briefly discussed in this final section.

Supermarkets may have different reasons for increasing the sustainability in their food provision strategies. Increased attention to environmental concerns may pay off financially by reducing costs, (see also Iles (2007) for some examples in transporting, energy and waste). Supermarket firms may also decide for change to attract new customers and increase sales at the higher quality end of their product range. Economic reasons however cannot explain all change because increasingly non-economic considerations become included as well, to offset NGO or consumer protests, or because of environmental concerns and worries about the future provision of food (c.f. the decision by the Dutch supermarkets to only sell MSC-labelled fish by 2011). Seyfang (2005) criticises what she calls this strategy of 'mainstream sustainable consumption', i.e. the purchasing of more sustainably produced goods, because the market mechanism is a poor tool to deliver the outcomes ecological citizens desire. She defends the need for a radical re-organising of economies to be 'more localised, decentralised, smaller-scale, and oriented towards human well-being and environmental protection' (ibid: 298). Such changes will not result from the conventional market and policy framework and require government interventions. This way, Seyfang remains closely connected to the transition theory where niche innovations should initiate a broader transition process. Nevertheless, I want to argue that despite the diversity in reasons among retailing firms for environmental change, their engagement is essential and may effectively lead to the greening of food provision.[5]

When trying to understand these dynamics of (environmental) change, the supermarket should not be approached in isolation, but as a key node in a chain of social systems and networks connecting primary food production with final consumption and disposal. These (sub-)systems are connected and impact each other through socio-technical and economic mechanisms, but the location where the system of provision meets the consumer, the supermarket, is of particular significance. The supermarket shopping floor is the locale of the consumption junction where provider logic and consumer logic meet each other and understandings and practices on sustainable food are (re-)created. So, even if these supermarkets are becoming increasingly standardised, even at the global level, they may still exhibit different configurations of systems of provision and consumer practices. In this paper I was able to distinguish three different trajectories in the promotion of more sustainable food in Western Europe: provider-induced, government-induced, and consumer-induced. Which trajectory was applied largely depended on the specific national context of the organisation of the food retail, where the divergence in supermarket characteristics remains surprisingly large, and on national political culture and specific national developments, c.f. Germany where the BSE crisis led to radical changes in agricultural and food policy. Despite the process of globalisation, it is therefore useful to consider food provision in Western Europe as different national regimes and greening them as regime change, requiring transformations of complex

[5] Reviewing the impacts from the increased sustainability concerns among retailers goes beyond the scope of this paper, but (Van der Grijp et al., 2005) concluded that supermarket-initiated, private-sector programmes may be considered a positive step forward to stimulate the implementation of food safety and sustainable development in practice. The scope is however limited because it only includes the already selected suppliers, which are mostly larger farms and the focus is on the specific sustainability concerns defined by the retailer.

socio-technical systems at the national level. The focus in transition theory on innovations at the niche level seems too restrictive as changes may also generate from other system levels.

The configuration of consumer and retailer roles/responsibilities may differ very much from greening via consumer empowerment (political consumerism) to increasing sustainability ‘behind the consumers’ back’. Even in the latter case supermarkets differ as to whether they only increase the number of sustainable food products on sale or whether they develop a coherent overall strategy for the shop and the corporation as a whole (including energy, transport etc.). The (potential) role of consumers in greening the supermarket needs further study as they are often referred to by supermarkets for the justification of taking steps (or not) for change. This perspective seems also responsible for the selective inclusion of particular sustainability concerns (climate change, food safety and animal welfare) at the expense of others (labour conditions, farmers’ incomes). Consumption practices at the shopping floor should be better understood by linking them with lifestyle politics, trust-enhancing mechanisms and different information and communication strategies (Halkier, 2001). Furthermore, different forms of consumer engagement should be identified and connected with different strategies to effectuate this (Boström and Klintman, 2008).

Literature:

Aberdeen Group (2008). *Sustaining the Global Food Supply Chain*. Boston: Aberdeen Group.

Baltussen, W. et al., (2006). *Een Biologisch Prijsexperiment; Grenzen in zicht?* (No. 7.06.19). Den Haag: LEI.

Bhaskaran, S., Polonsky, M., Cary, J., and Fernandez, S. (2006). Environmentally sustainable food production and marketing; Opportunity or hype? *British Food Journal, 108*(8), 677-690.

Boström, M., and Klintman, M. (2008). *Eco-standards, product labelling and green consumerism*. Houndmills: Palgrave MacMillan.

Bunte, F. (2009). *Prijsvorming glastuinbouw* Den Haag: LEI, Wageningen UR.

Burch, D., and Lawrence, G. (Eds.). (2007). *Supermarkets and Agri-food Supply Chains; Transformations in the Production and Consumption of Foods*. Cheltenham and Northampton: Edward Elgar.

Clapp, J., and Fuchs, D. (2009). Agrifood Corporations, Global Governance and Sustainability; A Framework for Analysis. In J. Clapp and D. Fuchs (Eds.), *Corporate Power in Global Agrifood Governance* (pp. 1-24). Cambridge (MA), London (UK): The MIT Press.

Clarke, I. (2000). Retail power, competition and local consumer choice in the UK grocery sector. *European Journal of Marketing, 34*(8), 975-1002.

Coe, N., and Hess, M. (2005). The internationalization of retailing: implications for supply network restructuring in East Asia and Eastern Europe. *Journal of Economic Geography, 5*, 449-473.

CREM (Consultancy and Research for Environmental Management) (2002). *Identificatie van succes- en faalfactoren bij het vermarkten van duurzame producten*. Amsterdam: CREM.

Crewe, L. (2000). Geographies of retailing and consumption. *Progress in Human Geography, 24*(2), 275-290.

Dagevos, H., and Horlings, I. (2004). Van Wasserbombe tot vlinderende consument. In L. Knippenberg, K. Nauta & H. Horsten (Eds.), *Een kwestie van smaak; duurzame consumptie in Brabant.* (pp. 85-96). Tilburg: Telos.

Dixon, J. (2007). Supermarkets as New Food Authorities. In D. Burch and G. Lawrence (Eds.), *Supermarkets and Agri-food Supply Chains: transformations in the Production and Consumption of Foods* (pp. 29-50). Cheltenham (UK) and Northampton (MA): Edward Elgar.

Dobson, P., Waterson, M., and Davies, S. (2003). The patterns and implications of increasing concentration in European food retailing. *Journal of Agricultural Economics, 54* (1), 111-125.

Dries, L., Reardon, T., and Swinnen, J. (2004). The rapid rise of supermarkets in Central and Eastern Europe: implications for the agrifood sector and rural development. *Development Policy Review, 22* (5), 525-556.

ETC-Group (2005). *Oligopoly, Inc. 2005. Concentration in Corporate Power* (No. 91): ETC Group.

ETC Group (2008). *Who Owns Nature? Corporate Power and the Final Frontier in the Commodification of Life*. Ottawa: ETC Group.

Flynn, A., Marsden, T., and Smith, E. (2003). Food regulation and retailing in a new institutional context. *The Political Quarterly, 74* (1), 38-46.

Fox, T., and Vorley, B. (2004). *Stakeholder Accountability in the UK Supermarket Sector; Final report of the 'Race to the Top' project*. London: IIED and Race to the Top.

Fulponi, L. (2006). Private voluntary standards in the food system: The perspective of major food retailers in OECD countries. *Food Policy, 31*, 1-13.

Geels, F. (2004). Understanding system innovations: a critical literature review and a conceptual synthesis. In B. Elzen, F. Geels and K. Green (Eds.), *System Innovation and the Transition to Sustainability; Theory, Evidence and Policy* (pp. 19-47). Cheltenham: Edward Elgar.

Geels, F. (2005). *Technological Transitions and System Innovations: A Co-Evolutionary and Socio-Technical Analysis*. Cheltenham, UK, and Northampton (Mass), USA: Edward Elgar Publishing.

Geels, F. (2006). Multi-level perspective on system innovation: relevance for industrial transformation. In X. Olshoorn and A. Wieczorek (Eds.), *Understanding Industrial Transformation: Views from Different Disciplines* (pp. 163-186). Dordrecht: Springer.

Gereffi, G., Humphrey, J., and Sturgeon, T. (2005). The governance of global value chains. *Review of International Political Economy*, *12*(1), 78-104.

Gerlach, S., Kropp, C., Spiller, A., and Ulmer, H. (2006). Die Agrarwende – Neustrukturierung eines Politikfelds. In K.-W. Brand (Ed.), *Von der Agrarwende zur Konsumwende? Die Kettenperspektive; Ergebnisband 2* (Vol. 2, pp. 37-61). Munchen: Oekom Verlag.

Halkier, B. (2001). Risk and food: environmental concerns and consumer practices. *International Journal of Food Science and Technology, 36*, 801-812.

Harvey, M. (2007). The Rise of Supermarkets and Asymmetries of Economic Power. In B. David and G. Lawrence (Eds.), *Supermarkets and Agri-food Supply Chains; Transformations in the Production and Consumption of Foods* (pp. 51-73). Cheltenham (UK) and Northampton (MA): Edward Elgar.

Helmle, S. (2004). *Identitätsfindung un Wohlbefinden. Über die Symbolik der Handlung "Einkaufen im Bioladen" auf der Grundlage lebensgeschichtlicher Erzählungen* (Vol. 55). Weikersheim: Margraf Verlag.

Hughes, A. (2007). Supermarkets and the Ethical Trade/Fairtrade Movement: Making Spaces for Alternatives in Mainstream Economies? In D. Burch and G. Lawrence (Eds.), *Supermarkets and Agri-food Supply Chains; Transformations in the Production and Consumption of Foods* (pp. 173-191). Cheltenham (UK) and Northampton (MA): Edward Elgar.

Hughes, A., Wrigley, N., and Buttle, M. (2008). Global production networks, ethical campaigning, and the embeddedness of responsible governance. *Journal of Economic Geography*, *8*, 345-367.

Iles, A. (2007). Seeing Sustainability in Business Operations: US and British Food Retailer Experiments with Accountability. *Business Strategy and the Environment, 16*, 290-301.

Johnston, J. (2008). The citizen-consumer hybrid: ideological tensions and the case of Whole Foods Market. *Theory and Society*, *37*, 229-270.

Jones, P., Comfort, D., Hillier, D., and Eastwood, I. (2006). Corporate social responsibility: a case study of the UK's leading food retailers. *British Food Journal, 107*(6), 423-435.

Konefal, J., Mascarenhas, M., and Hatanaka, M. (2005). Governance in the Global Agro-food System: Backlighting the Role of Transnational Supermarket Chains. *Agriculture and Human Values, 22*(3), 291-302.

Korbee, D. (2008). *Greening food provisioning: sustainability strategies of Dutch supermarkets as communicated through the physical characteristics of the retail-outlets.* Wageningen University, Wageningen.

Lang, T. (2003). Food industrialisation and food power: implications for food governance. *Development Policy Review, 21* (5-6), 555-568.

Lang, T., and Barling, D. (2007). The Environmental Impact of Supermarkets: Mapping the Terrain and the Policy Problems in the UK. In D. Burch and G. Lawrence (Eds.), *Supermarkets and Agri-food Supply Chains; Transformations in the Production and Consumption of Foods* (pp. 192-215). Cheltenham (UK) and Northampton (MA): Edward Elgar.

Lawrence, G., and Burch, D. (2007). Understanding Supermarkets and Agri-food Supply Chains. In D. Burch and G. Lawrence (Eds.), *Supermarkets and Agri-food Supply Chains; Transformations in the Production and Consumption of Foods* (pp. 1-26). Cheltenham (UK) and Northampton (USA): Edward Elgar.

Lyons, K. (2007). Supermarkets as Organic Retailers: Impacts for the Australian Organic Sector. In D. Burch and G. Lawrence (Eds.), *Supermarkets and Agrifood Supply Chains. Transformations in the Production and Consumption of Foods* Cheltenham (UK) and Northampton (MA): Edward Elgar.

Oosterveer, P. (2002). Reinventing risk politics: reflexive modernity and the European BSE crisis. *Journal of Environmental Policy & Planning, 4* 215-229.

Oosterveer, P. (2007). *Global Governance of Food Production and Consumption; Issues and Challenges*. Cheltenham and Northampton: Edward Elgar.

Oosterveer, P., Guivant, J., and Spaargaren, G. (2007). Shopping for green food in globalizing supermarkets: sustainability at the consumption junction. In J. Pretty et al. (Eds.), *The Handbook of Environment and Society* (pp. 411-428). London: Sage Publications.

Reardon, T., and Hopkins, R. (2006). The Supermarket Revolution in Developing Countries: Policies to Address Emerging Tensions Among Supermarkets, Suppliers and Traditional Retailers. *The European journal of development research, 18*(4), 522-545.

Seyfang, G. (2005). Shopping for sustainability: Can sustainable consumption promote ecological citizenship? *Environmental Politics, 14*(2), 290-306.

Smith, A. (2003). *Alternative Technology Niches and Sustainable Development* (No. 2003/2). Sussex: SPRU (Science & Technology Policy research Unit).

Spiller, A., and Gerlach, S. (2006). Wertschöpfungsketten für Bio-Produkte:Getrennte Welten. In K.-W. Brand (Ed.), *Von der Agrarwende zur Konsumwende? Die Kettenperspektive* (Vol. 2, pp. 83-106). München: oekom verlag.

Torjusen, H., Sangstad, L., Jensen, K. O. D., and Kjaerness, U. (2004). *European Consumers' Conceptions of Organic Food: A Review of Available Research* (No. 4). Oslo: SIFO.

Traill, W. B. (2006). The Rapid Rise of Supermarkets? *Development Policy Review, 24*(2), 163-174.

Van der Grijp, N. M., Marsden, T., Salete, J., and Cavalcanti, B. (2005). European retailers as agents of change towards sustainability: The case of fruit production in Brazil. *Environmental Sciences, 2*(4), 445-460.

Willer, H., and Yussefi, M. (Eds.). (2004). *The World of Organic Agriculture. Statistics and Emerging Trends, 2004*. Bonn: IFOAM.

Willer, H., and Yussefi, M. (2007). *The World of Organic Agriculture, Statistics and Emerging Trends 2007*. Bonn and Frick: IFOAM and FiBL.