1. The role of multinational enterprises in promoting system-level innovations in the Finnish food industry

Kaisa Sorsa

1.1 INTRODUCTION

Systemic change is a highly topical issue, both in Finland and internationally. Advancing sustainable development and dealing with structural transformations in the Finnish economy are currently great challenges for Finnish policy-makers. Systemic, or system, innovation refers to large-scale transformation that concerns structures, operational models and their interactions that provide preconditions for activities such as sustainable development and opening up of business opportunities in global markets (Valovirta et al., 2011). System innovations go beyond a single organization and are qualitative innovations that are realized by a variety of participants within the system and that fundamentally change both the structure of the system and the relationships among participants. It is within these systemic innovations that innovations at the individual level occur in terms of product, process and project. Innovations are new or improved products, services or processes that provide solutions to meet market needs (Tidd et al., 2001; Bessant et al., 2005).

Since the 1980s, the Finnish food industry and its value chains have been going through a transition from national markets to globalized food markets (Sorsa, 2009, pp. 65–6). This transition has taken place over the last 30 years and it appears that this will continue at unrelenting speed. Multinational players, with their global management cultures and rules, have entered into the Finnish markets, and their proportional market share appears to be growing (for example, Lidl), especially when compared to the two major retail chains in Finland.

This research aims at increasing understanding of the role that transnational private regulation (TPR) and multinational enterprises (MNEs) and

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their contract practices play in accelerating systemic change in the Finnish food industry and society. The research questions are: (1) In what way do the MNEs promote system-level innovations in the Finnish food industry, or do they? (2) What mechanisms (TPR, contracts, and good practices) are used?

The remainder of this chapter is set out as follows. The second section describes the theoretical framework for transition. The third section discusses the transition stages and tools. The fourth section explains corporate social responsibility (CSR) and MNEs in the Finnish context. The fifth section describes the research methods and the sixth section describes the findings. The seventh section concludes.

1.2 THE MULTI-LEVEL PERSPECTIVE ON TRANSITIONS

The analysis model used in this research is borrowed from Geels (2004, p. 33), who developed the model based on Nelson and Winter's (1982) technological regime concept and Rip and Kemp's (1998) sociological categorization of rules. The model distinguishes three levels of analytical concepts: niche innovations, socio-technical regimes and socio-technical landscape (Rip and Kemp, 1998; Geels, 2002).

A transition is defined here as the shift from an initial dynamic equilibrium to a new dynamic equilibrium, with changes from one socio-technical regime to another (system change, system innovation). The transition also involves innovation in an important part of a societal subsystem (Geels and Schot, 2007, p. 402). The underlying mechanism is co-evolution of subsystems. One event alone cannot cause a transition due to the co-evolution of a set of slow changes (Loorbach and Rotmans, 2006, pp. 189–90). An example is possible future efficiency driven by an agricultural transition to sustainably driven agriculture (for example, promotion of organic agriculture), which will involve system innovations in science, technology, consumer preferences and policy.

The socio-technical regime is the focal unit of analysis in this research. The term 'socio-technical system' covers of a cluster of elements, including technology, regulation, user practices and markets, cultural meaning, infrastructure, maintenance networks and supply networks (Geels, 2004, p. 19). This chapter focuses on the interactions between the food socio-technical regime, the landscape and niche levels. System changes are more extensive than radical innovations because they both encompass and affect user practices, policies, cultural meaning, and so on. In particular, we will discuss regulation, user practices and markets, and supply networks in relationship to MNEs.

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A socio-technical regime recognizes that firms and technologies are embedded within wider social and economic systems. Socio-technical regime refers to the semi-coherent set of rules carried by different social groups (Geels, 2004, p. 33). These regimes are relatively stable configurations of institutions, techniques and artifacts, as well as rules, practices and networks that determine the 'normal' development and use of technologies (Rip and Kemp, 1998) and other resources.

The food socio-technical regime has been quite turbulent during the last two decades due to TPR. It has shaken up the 'normal' way of doing business and this trend appears to be strengthening. The recent growth in the number and use of voluntary sustainability standards can largely be traced to a growing recognition of the failure of public action in addressing a host of sustainability issues (Potts et al., 2014, pp. 8–9).

The socio-technical food regime consists of different value chains. The global value chain is defined here as 'a network of labor and production processes whose end result is a finished commodity' (Bair, 2005, p. 155). Because socio-technical regimes spill over the national borders of different countries, it is necessary for public or private actors to set transnational rules. Rule systems also include contractual networks (Sorsa, 2011b, pp. 66–75).

Niche innovations are developed on the micro-level where radical novelties or regulatory novelties emerge. These novelties are initially unstable socio-technical configurations with low performance. Niches act as 'incubation rooms', protecting novelties against mainstream market selection. Niche innovations are carried and developed by small networks of dedicated actors, often outsiders or fringe actors (Geels and Schot, 2007, p. 400).

Private regulatory schemes represent one kind of niche innovation. In many cases they have developed from unstable socio-technical configurations to mainstream schemes (Sorsa, 2011a, pp. 151–62; 2012, p. 6). The opportunities for voluntary standards to enable transformational change across major mainstream markets are now well established and continue to grow (Potts et al., 2014, pp. 8–9).

1.3 TRANSITION STAGES AND TOOLS

1.3.1 Transition in Stages

According to transition theory, a transition takes place through the following stages: (1) a pre-development phase in which there is very little visible change at the systems level, but a great deal of experimentation at

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the individual level; (2) a take-off phase in which the process of change starts to build up and the state of the system begins to shift because of different reinforcing innovations or surprises; (3) an acceleration phase in which structural changes occur in a visible way through the accumulation and implementation of socio-cultural, economic, ecological and institutional changes; and (4) a stabilization phase in which the speed of societal change decreases and a new dynamic equilibrium is reached (Loorbach and Rotmans, 2006, p. 193).

The adoption of international standards in the private sector has been explained through several theories, including, for example, the competitive advantage theory. The motivations of enterprises that produce and supply certified goods and services, as well as those of the traders and other middle-tier players in the supply chain, are not covered in detail. This bias reflects the current state of knowledge regarding standards and certification systems.

A major portion of sustainable development is ultimately about radical changes in the systems of production and consumption. By implication, governance for sustainability is about working through formal and informal institutions to bring about societal change. Implementing a commitment to sustainable development entails a substantial transition not just to a broader understanding and a more ambitious set of objectives, but also to more coherently interrelated institutional structures and processes for planning, administration, markets, tradition and choice on every scale (Parto and Doloreux, 2003). Clearly this is not a transition that can be accomplished quickly or easily. The challenge is to show how such a transition can be accomplished and to develop a core set of tools that would make governance for sustainability manageable (Kemp et al., 2005, p. 17).

The analysis of system-level innovations in the Finnish coffee and fast-food sector from a TPR perspective means in practice that we are interested in the standard-setting, implementation and monitoring of standards by MNEs doing business in Finland and the contracting practices of these MNEs in Finland. When talking about MNEs, the concept of 'micro-multinationals' – small to medium-sized companies that operate plants in a mix of high- and low-cost locations to gain maximum benefits from different forms of production – fits better into the Finnish context as Finnish-origin companies (for example, Gustav Paulig Ltd, Kesko Group) are very small compared to international MNEs.

MNEs have several definitions, but basically they can be defined as corporations that have activities abroad in the form of subsidiaries, affiliates and joint ventures (Moosa, 2002). Rugman and Verbeke (2004) identify an MNE as an organization that has value-added activities in at least two countries. A multinational enterprise is defined here as a corporation

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that has its facilities and other assets in at least one country other than its home country. Such companies have offices and/or factories in different countries and usually have a centralized head office where they coordinate global management.

As coffee cannot be cultivated in Finland, the raw material needs to be imported. These products link the Finnish food value chains into global value chains and the need to use transnational rules is thus unavoidable. This perspective is justified because we try to develop recommendations for the Finnish government about the drivers and barriers to system-level innovations.

1.3.2 Transition Tools

Since the 1990s, it has become increasingly evident that the role of transnational private regulation constitutes a new body of rules, practices and processes, created by private actors, firms, NGOs and independent experts (Henson and Humphrey, 2009; Cafaggi, 2011a, p. 20; Lin, 2011; Sorsa, 2011b). Private regulation in food safety and in CSR is growing, and the adoption of new models affects both access to markets and consumer safety. The impact differs across commodities, where in some cases competitiveness is primarily linked to price and quality, while in others safety plays an ever more significant role. National and supranational rules and legislation are not sufficient when it comes to achieving sustainability and food safety objectives within the framework of the global economic and trade system. In many cases the slow process of developing government policy and accompanying regulations does not satisfy the market's need for clarity and communication (Lee, 2011; Rinsberg, 2011; Washington and Ababouch, 2011). To fill in the gap, in some cases civil society bodies such as NGOs, and in other cases private companies, have stepped in. In both cases voluntary standards and codes of conduct are developed to complement or even substitute for absent regulations (Sorsa, 2010; Cafaggi, 2011b, p. 96).

1.4 CORPORATE SOCIAL RESPONSIBILITY IN THE FINNISH ECONOMY

1.4.1 Corporate Social Responsibility (CSR)

Public policy and private regulation elements of the socio-technical regime are discussed here by explaining CSR policy instruments in Finland. The Finnish government is committed to compliance with, and the promotion

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of CSR in many ways. For example, the Finnish National Commission on Sustainable Development (FNCSD) was created in 1993, and is chaired by the prime minister. It is responsible for adapting international sustainable development goals into Finland's national policies. In addition, Local Agenda 21 plans are being undertaken in many municipalities. The Finnish Act on Environmental Impact Assessment Procedure requires environmental assessment of policies and plans and several pilot projects have been conducted (see, for example, IGES, 2007, pp. 2–3).

As an outcome of a wide-ranging strategy group, FNCSD prepared the 'Society's Commitment to Sustainability' initiative. Through the commitment, the government and the administration, in collaboration with various societal actors, pledge to promote sustainable development in all their work and operations. 'Society's Commitment to Sustainable Development' was officially accepted in December 2013. It will serve as a long-term framework and instrument of policy coherence for the strategy and program work of different administrative sectors. It will support the setting of objectives of future reviews and future government programs. It is an interpretation of what sustainable development means. The measures specified by different operators will, in turn, define the content of sustainable development in practice (Ministry of the Environment, 2013).

The Finnish government also supports the implementation of international codes of conduct guiding the operations of multinational enterprises. Examples include the *OECD Guidelines for Multinational Enterprises* (OECD, 2011), the *ILO Declaration on Fundamental Principles and Rights at Work* (ILO, 1998), and the *Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy* (ILO, 2006). These guidelines include instructions and rules of conduct concerning financial, ecological and social responsibility of enterprises, such as human rights, rights at work, the abolition of child labor, the environment, anti-corruption measures, consumer protection and science and technology.

Having committed to these guidelines, the Finnish government strives to influence Finnish companies so that they operate sustainably and responsibly in all countries; compliance with the guidelines is voluntary. Furthermore, business and non-governmental organizations have compiled corresponding recommendations for enterprises. The Committee on Corporate Social Responsibility, operating in connection with the Ministry of Employment and the Economy, is the 'National Contact Point' that monitors the application of the *OECD Guidelines for Multinational Enterprises* in Finnish multinationals.

Finland supports the efforts of the United Nations' Global Compact (ten principles in the areas of human rights, labor, the environment and anti-corruption) through development cooperation funds. Enterprises

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and other organizations can, if they wish, commit themselves directly to compliance with the Global Compact principles.

In addition to public sector commitments and support in the Finnish economy, private regulation schemes entered the Finnish food markets during the first decade of 2000 to 2010. The coffee sector has been a front-runner industry using sustainability labels. World famous organic and fair trade labels entered first, followed by the Rainforest Alliance label and UTZ-certified labels (Sorsa, 2012, pp. 9–20), and since 2005 there has been considerable growth in sustainability labeled coffee products (Sorsa, 2009, 2011b).

1.4.2 Multinational Enterprises as Drivers of CSR in Finnish Food Value Chains

Industry element of the socio-technical regime

The industry element of the socio-technical regime is discussed here from the MNE perspective. MNEs are some of the most significant players worldwide in terms of technology creation and control, and they actively transfer technology internally from their headquarters to their subsidiaries abroad (OECD, 2011). They are a mobilizing force for the globalization of innovation and R&D activities (Dachs et al., 2008) by linking their own subsidiaries, affiliates and joint ventures with subcontractors, suppliers, service providers and strategic alliance partners (Ernst and Kim, 2002, p. 147).

But what is the role of MNEs in terms of spreading CSR practices and implementing transnational private regulation rules? Institutions have a clear impact on global value chains, their composition as well as location (Sturgeon et al., 2008). There are studies that underline the importance of institutions in the examination of value chains (Talbot, 1997; Gereffi et al., 2005), but more is needed to understand the different ways institutions are affecting the global value chains. Institutions include the regulatory mechanisms of nation-states and other intergovernmental institutions such as the European Union or World Trade Organization (Bair, 2005). In some cases institutions can cause more harm than good to the value chain participants (Talbot, 1997), and many of the actions can be very slow to change.

Private regulation mechanisms are used by MNEs to drive the change in global value chains (Sorsa, 2011b, pp. 103–29). Private regulation plays a role as a transfer mechanism, for example by using a code of conduct and contracts (Oxfam, 2014, p. 15). Very large multinationals have budgets that exceed those of many small countries. According to the International Labour Organization (ILO), a United Nations agency, a multinational

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enterprise is more powerful than an economic investor alone. A multinational with operations in a given country can promote social and economic welfare, improve living standards and foster human rights such as freedom of association. The ILO similarly recognizes that multinational operations can foster abuse (for example, exploiting cheap labor or skirting labor laws in a multinational's home country). In 2006, the ILO drew up its *Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy*, aimed at fostering positive regional contributions, rather than exploitation. Using their economic power MNEs have real potential to change their value chains.

General aspects of the Finnish economy and food industry in the era of globalization

A short introduction to the Finnish food markets will be discussed next. The total annual consumer expenditure on food and beverages in Finland in 2012 was €22.7 billion. The share of food and non-alcoholic beverages consumed at home was a little over a half of this, €13 billion (12.5 per cent) (Niemi and Ahlstedt, 2014, p. 5). The most important sectors of the food industry in Finland are meat processing, bakery, brewing, beverages and the dairy industry. In 2012, the food industry employed 39 400 people, which is 1.6 per cent of the employed in all sectors.

The Finnish food chain works systematically to produce safe and appealing food. Thanks to persistent quality control the consumer who buys a product knows its origin and production stages (Sorsa, 2009, pp. 101–14). Quality systems help to minimize risk factors and the actions taken can be traced. Farms have a quality system of their own, while production contracts may be used to integrate the work on the farm with the quality system of the food processing industry. Quality work has improved animal welfare, environmental protection and safety of raw food material. The incidence of pests and plant diseases is much lower in Finland than in most other countries, which means that the quantities of chemical substances needed to prevent pests, diseases and weeds are quite small. Most of the raw material used in the Finnish processing industry is of domestic origin.

It appears that the Finnish food industry persists as a very traditional industry, in that globalization has not broken down national clusters within the food industry to the extent that it has done in other industries (Pajarinen et al., 2010, p. 13). One reason for this may be that ties to the locality and the importance of food for the consumer are still keeping food a somewhat local product. This is also emphasized by the fact that the trend amongst Finnish consumers is to purchase pro-local products. All the phases in the value chain need to be present in Finland to some extent to guarantee a local product, and this prevents the regions from

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specializing too much. Another explanation is that the global value chain for the food industry is not as sophisticated as in many other industries, meaning that the value chain is quite simple, but also that the product is not complex. A third issue is political, as countries tend to practice protectionism when it comes to the food industry. This encourages further steps towards self-sustainability in order to guarantee the food supply. Last, the preservation time of food products restricts their mobility and therefore naturally helps to maintain the food industry as a local industry. Although there has been much development in preserving food items and raw material, there are still limits to what can be done (Karjalainen, 2011, pp. 65–6).

Multinational enterprises in the Finnish context

The World Economic Forum (WEF) ranks Finland as the third most competitive economy in the world (Schwab, 2014). Finland has a highly skilled workforce, an open and robust financial sector and high-quality research and infrastructure. Less attractive aspects include high income taxes and some labor market inflexibility. With a stable economy, firm political system, non-corrupt environment, developed infrastructure and a wealthy society, the nation has established attractive premises for inward foreign direct investment. The attractiveness of neighboring countries may also be a reason why companies wish to invest in Finland. Finland represents a good gateway to the Baltic countries, Russia and other Nordic countries with its geographical proximity and good political relations. Finland has been said to be a bridge between the East and the West. Recent economic and societal development in Finland has largely been built on developing high technology, its effective utilization and determined efforts to increase exports. This has significantly improved Finland's position in international competition. In many international comparisons Finland has continuously ranked as one of the leading countries in innovation, as measured in terms of growth, competitiveness and technological sophistication and infrastructure (for example, IMD World Competitiveness Center and WEF annual rankings) (Invest in Finland, 2013, pp. 5, 11, 20–22; Schwab, 2014, pp. 11, 14, 16).

From the early 1990s onwards, however, the business strategy of Finnish multinationals has been to move their production to low-wage countries or closer to expanding markets outside Finland. During the years of the global financial crisis 2007–10 multinationals continued to implement this strategy. From 2007 to 2010, the 30 largest Finnish multinational corporations reduced their personnel in Finland by approximately 32 500, from 215 000 down to 182 500 (Sauramo and Oesch, 2013).

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1.5 RESEARCH METHODS

Systemic innovations are analyzed here empirically using a case study methodology. An extremely in-depth, vertical and descriptive approach is taken by examining the value chains of coffee and fast-food products and private-label coffees of one Finnish retail chain. In detail, the research objectives are both within the area of retail products, and the area of hotels, restaurants and catering (HoReCa). These two product value chains comprise the area of interest, since the scope of the study needs to be kept fairly narrow due to the in-depth approach.

The coffee and fast-food value chains represent two cases and in-depth interviews (two directors in a coffee roaster company, one purchaser in a retail company head office, one quality manager in an agribusiness and food company, a business development manager in a certification organization and one factory director at a sugar company) in MNEs in Finland. These interviews were conducted to gather information from the actors in these value chains.

This approach addresses the research gap for empirical results, and at the same time provides concrete enough information to the public sector. The results should help to understand the larger view, the functioning of global value chains in the Finnish food industry, and also contribute to the ongoing discussion on drivers of and obstacles to system-level innovations.

In order to understand how the actors of the coffee and fast-food value chains understand their role in relation to system-level innovation we asked the interviewees thematic questions. The two themes discussed were: (1) How are system-level (SL) innovations created in the value chain? (2) What promotes or prevents system-level innovations from emergence and spillover? Each theme was divided into sub-questions:

Theme I: How are system-level innovations created in the value chain?

1. Which part of the value chain has the best opportunities for innovation? Who or what can influence other members to adopt extensive changes in the value chain?
2. Do you think that change in consumer demand is a necessary premise, for example to raise sustainable commodity production (pull strategy), or may the raw material processors or farmers achieve changes by bringing new sustainably produced products to the market (push strategy)?
3. Are sustainable development standards (fair trade, UTZ, Rainforest Alliance) or quality assurance standards (GLOBALG.A.P, 4C) related to system innovations?

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4. How do you see the role of non-governmental organizations (NGOs) as engines or barriers to innovations? What about social media?

Theme II: What promotes or prevents SL innovations from emergence and spillover?

1. How are SL innovations influenced by market size, homogeneity or heterogeneity of the market?
2. What is the role of frontrunner companies or competitors for SLs?
3. How do private-label products affect coffee market development?
4. What difference does it make that standards are different? Does it prevent or promote sustainably produced commodity demand?
5. All standards are not marketed for the consumer (such as, for example, 4C in coffee). Does it matter?
6. What are the prospects for your company value chain in the future? Will the share of certified products rise?
7. Is there something special in the Finnish coffee culture?

As the value chain company people represent the supply side, we wanted to also investigate the demand side in order to obtain the consumer perspective. Two empirical investigations were aimed at shedding light on the market and user part of the socio-technical regime. As such, two consumer surveys were conducted during the food and wine fair in Turku, 5–7 November 2012, in order to analyze the demand from the consumer side of the system-level change. We received 1241 answers (809 + 432), which were analyzed quantitatively. A literature review was also used for analysis of changes in the Finnish food industry landscape over the past 20 years.

1.6 CASE STUDY FINDINGS

1.6.1 The Coffee Case

The four main actors in the Finnish coffee market are Paulig Ltd, Meira Ltd, and grocery chains with their own private-label coffee brands – Kesko and S-Group.

Paulig Ltd is a family-owned company with turnover of €849.7 million in 2013 and 1881 staff. Paulig has business operations in 15 countries, but its headquarters is in Helsinki. Paulig is the largest coffee exporting company and its share is nearly 80 per cent of total Finnish coffee export volume.

Meira Ltd, owned by the Italian Massimo Zanetti Beverage Group, is the

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second largest coffee roaster in Finland. It has a roaster plant in Helsinki. Its turnover was €72.853 million with 165 personnel in 2013. Massimo Zanetti Beverage Group is one of Europe's largest coffee producers and distributors. The company is one of the largest exporters of Brazilian coffee with coffee roasting plants in Austria, Brazil, France, Netherlands, Poland and the United States and operations in 100 countries. In Finland, Meira has a roasting plant and spice company.

From the perspective of roasters Paulig and Meira, the Finnish internal market can be divided into two different segments: the retail segment via Kesko and S-Group, and the HoReCa segment. Both segments can further be divided into a commodity coffee segment and differentiated coffee segment. In the commodity segment the main focus from the roaster's perspective is on a product's physical quality (taste, high quality) and price. In the differentiated coffee segment, sustainability (environmental, social, economic aspects) criteria are important.

1.6.2 Local Conditions and System-level Innovations

According to the coffee roaster's representative, system-level innovations are affected considerably by local condition factors such as consumer choices. A coffee barista pointed out that Finnish consumers are price oriented. Young food- and wine-oriented consumers are more interested in sustainability, ecological labels and the taste of food. According to the Finnish Coffee Roasters Association, in 2013, Finnish consumers used 10 kg roasted coffee per capita, which is approximately at the same level as around the mid-1990s. Not only do Finns drink more coffee than other nationalities, they also prepare it differently. Consumers favor a light-roasted coffee. Eighty-six per cent of the consumed coffee in 2013 was light roasted (www.kahvi.net), nevertheless, there is a growing trend towards darker-roasted coffee, and increased knowledge about Italian espresso, which together seem to illustrate a change in what consumers are used to drinking. Quality of the coffee was also mentioned as the most important criterion in our survey of consumers. Second-most important was the brand and price came in third place. Eco-labels achieved fourth place.

The fast-food MNC representative spotlighted local legislation. The strictness of legislation varies in different countries. An agribusiness and food industry quality manager saw local conditions as playing a large role, and said: 'One of our foundations in risk analysis is observing local conditions. Same raw materials can be produced in many different ways, and it affects the rest of the chain'.

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1.6.3 Challenges and Opportunities for Innovation

According to the coffee roaster's representative, the challenges for system-level innovations are at the beginning of the value chain, such as how to increase the amount of raw coffee cultivated according to the sustainability criteria. Local conditions, like climate factors and structural changes, can have a huge impact in producing countries. These have an effect on the whole value chain. The quality of the coffee is also a challenge. As one respondent said:

> We thought that UTZ was the best choice because it offered better changes [chances?] than fair trade coffee to get steady quality at the time. UTZ inspired us because the UTZ goal was to improve local farmer skills and create opportunities to become successful business partners. A fair trade solid price provided more financial support in our opinion.

The drivers of innovation came from demand. They continued: 'Demand will create a change'. The need for change comes from coffee roasting and 'fast-coffee' producers to the farmers. 'Washed and wet-treated coffees are more valuable and more asked-for than dry-treated coffees'.

From the coffee roaster's perspective, Finnish retail chain buyers represent the demand side. According to the purchaser of the retail chain the retail company was pushing the roaster to add sustainably labeled coffee to their private-label category, but as there was not enough available in Finland they had to license the production to Holland. In the last part of 2010, Gustav Paulig was able to produce enough sustainable coffee and nowadays it is a producer for the interviewed retail chain.

1.6.4 Drivers for Sustainability in the Fast-food Value Chain

Fast-food segment buyers have also put pressure on Paulig. McDonald's wanted to change its coffee to certified coffee, but there was not enough certified coffee available. When Paulig was able to satisfy the certified coffee demand with UTZ-certified coffee, both McDonald's and Kesko Group began to source their certified coffees from Paulig.

'Coffee exporters have a huge role in the value chain towards the farmers. We have a couple of large traders that are connected to both producers and to the Finnish coffee roaster. Of course they are doing business, but to ensure their business it makes sense to take care of the local farmers', explained a coffee roaster representative. The processing stage of the value chain comes to mind first for the fast-food quality manager. Of course there are possibilities in primary production for innovation, but at

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this stage of production, innovations are more expensive and the spread of innovation is slower:

> In McDonald's, drivers for system-level innovation come from NGOs, because 'we are a big buyer in the global market, we can influence certain matters'. Of course the pressure comes from other actors also, including legislation, if you think, for example, about animal welfare. In our chain the pressure for innovation relates to processors. For example, we want certain types of product or recipe changes to reduce allergens. Of course the processor can make some innovation, which we haven't been able to even think about.

As a large MNE, McDonald's has economic power in relation to its suppliers, which enables it to promote sustainability issues in its product value chains.

NGOs are real drivers for change for global MNEs like McDonald's. For example, Oxfam is an international confederation of 17 organizations networked together, in more than 90 countries, as part of a global movement for change. Oxfam has launched the 'Behind the Brands Scorecard' campaign (Oxfam, 2015) and has ranked the top ten food and beverage companies on their sustainability policies. These kinds of campaigns and tools make a real difference. During Ban Ki-moon's UN Climate Summit in New York in September 2014 Oxfam found that the food and beverage industry was willing to step up to a leadership role on climate change in new ways that will push the political agenda and levels of ambition. As this example demonstrates, NGOs play a crucial role in setting agendas, monitoring, and also in rewarding the frontrunners with a positive image.

McDonald's has developed several certification tools in order to tackle sustainability challenges – for example, the MAAP standard (McDonald's Agricultural Assurance Programme) in Europe. There are 16 different standards for the agricultural sector. MAAP is only applicable in Europe and McDonald's uses it if there is no other standard in use, like, for example, GLOBALG.A.P. McDonald's suppliers need to also comply with the Suppliers Quality Management System (SQMS). Food safety is a big part of SQMS, but the SQMS is a larger quality management standard that contains all the same things covered by ISO 22 000 and McDonald's own requirements, such as documentation. When McDonald's is looking for new suppliers, it has to be sure that a supplier's economic situation is stable. The supplier has to sign the McDonald's Code of Conduct for Suppliers. It is a contract that establishes common ground rules and the supplier's responsibility as employer and for environmental issues.

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1.6.5 The Role of Consumers for System-level Change

Is a change in consumer demand a necessary premise to raise sustainable commodity production (pull strategy), or may the raw material processors or farmers achieve changes by bringing new sustainably produced products to the market (push strategy)? The common answer from all interviewees was that consumer demand is necessary, because food processors do not produce products that customers do not buy.

There is, however, an interesting phenomenon in the Finnish coffee market. Coffee roasters and retail chains have brought to the coffee market many more new sustainably certified coffee brands than what consumers want to buy; there is not yet a large demand for the sustainably labeled coffee brands. K-Group's Pirkka private-label coffee category has five different coffee brands, all certified with fair trade, organic, UTZ certification or with double schemes. Responsible selections and services offered by the trading sector have an increasing impact on customers' purchasing decisions (Kesko's president and CEO). The same phenomenon is also seen in the fast-food value chain. The two most important fast-food companies, McDonald's and Finnish chain Hesburger, have decided to offer only sustainably labeled coffee in their fast-food restaurants. This means that these companies have made a strategic decision to promote sustainability in their value chains even though the demand from consumers does not offer an explanation for this change. McDonald's is using UTZ-certified coffee and Hesburger is selling only fair trade coffee.

1.6.6 Obstacles for System-level Changes

One of the obstacles found was that the Finnish market is a small market. The number of consumers is small in relative terms and consumers are very price sensitive. The Finnish food industry value chains are fairly uncooperative. The participants in the food industry value chains seem to be competing against each other rather than trying to optimize the value chain in order to produce the best product for the customer or to cut costs. There has been too little competition in terms of retailing in the Finnish food industry (Karjalainen, 2011, pp. 68–9). The lack of competition is changing, however, and the Lidl chain grew by 28 per cent in 2013 and has gained market share from the two Finnish retail chains K-Group and S-Group.

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1.7 DISCUSSION

Over the last 20 years, the Finnish food industry has gone through structural changes. Globalization has affected the Finnish food industry and Finnish retail business in many ways. Globalization is seen not just in the opening of domestic markets to international players, as MNEs have also more actively placed their subsidiaries in Finland. Meanwhile, Finnish food and retail MNEs have also extended their market to neighboring countries. MNEs, Finnish companies with their practices, and non-governmental organizations with their connections to the media and business network shape the socio-technical regime of the food industry in Finland.

The two case studies indicate that key actors can play a crucial role in transitions of the socio-technical regime. Their role can be seen as a driver of system-level innovation. MNEs on the supply side and on the buyer side can be frontrunners and have a positive influence in the acceleration of system-level innovation. MNEs of the retail sector with their private-label products can also play a remarkable role in change. Moreover, the ripple effect of the activities of MNEs abroad can be seen in the Finnish coffee business and fast-food value chains.

Key players in certain product markets can quite effectively accelerate the spillover of the system-level innovations. To provide traceability and assurance of good farming, leading MNEs (McDonald's, Kesko Group and S-Group) are increasingly demanding certified products or raw materials from their suppliers, using independent third-party standards as instruments (for example, fair trade, organic, Rainforest Alliance, UTZ certified, 4C, AAA and C.A.F.E Practices). Certification in itself is not the end game; rather, it is the first step on the improvement ladder and a common language to communicate value and values throughout the supply chain. According to Oxfam, the supplier codes are the most powerful way for companies to bring about changes, such as significant greenhouse gas (GHG) emission reductions. Companies must use their supplier codes to require suppliers to measure and disclose GHG emissions, and to establish clear, quantifiable reduction targets (Oxfam, 2014, p. 15).

There are several projects in producer countries that aim to increase productivity of coffee crops per square meter. Projects are often focused on teaching the farmers practical agriculture skills. Projects are funded by big global MNEs and NGOs play a crucial role in educating farmers.

A smaller coffee roaster like Gustav Paulig Ltd is a minor player globally, although it is an important actor in the Finnish coffee market. Smaller MNEs can join with the more powerful actors in partnership projects, such as has been pursued for climate change. Gustav Paulig Ltd has joined coffee and climate initiatives in order to support coffee farmers

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and to respond to changing climate conditions. The C & C (Coffee & Climate) initiative collects and consolidates best practices for adaptation in four project regions. Coffee farmers take part in hands-on training activities, with assistance to find strategies that suit their needs. Furthermore, coffee farmers and other stakeholders have access to an online platform: the C & C toolbox (Coffee & Climate, 2014). The major coffee companies push forward the climate change initiatives by showcasing examples like Starbucks and Nestlé (Nestlé, 2006, pp. 18–19).

According to theory, system-level innovation fundamentally changes both the structure of the system and the relationships among participants. The coffee sector is the best example of system-level innovation as it has experienced tremendous changes after the liberalization of the global coffee business. The start for system-level change was the year 1989, when the International Coffee Agreement (ICA) was not renewed. This meant liberalization of the coffee trade. What could be done in the coffee sector in order to improve the situation of the price fluctuations, as the ICA was no longer protecting against fluctuations? Private regulation schemes were developed and implemented in order to differentiate the coffee and in order to fill the regulatory gap. The MNEs were and still are the key players driving the change in global coffee value chains.

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