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**The rise of buyer-driven sustainability governance: Emerging trends in the
global coffee sector**

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Abstract

The coffee industry connects millions of smallholder farmers with global markets and has historically been a frontrunner in sustainability efforts. Yet, the governance of this value chain and its sustainability depends on the distribution of power between market actors. This paper applies a Global Value Chain approach (Gereffi, 1999) to characterize the current distribution of power and opportunities in the coffee sector, and examines how this characterization has influenced the sector's non-state market-driven (NSMD) sustainability governance structure (Bernstein and Cashore, 2007). The study finds that in a strongly buyer-driven chain, the reinterpretation of sustainability as supply chain management has led to the emergence of more company-owned standards and direct-impact projects as alternatives to third-party certification schemes, as well as their coordination in pre-competitive sectoral platforms. The simultaneous rise of producing-country definitions of sustainability points to a continued fragmentation of sustainability governance and a loss of authority of traditional NSMD channels.

Keywords: Sustainability governance, non-state market-driven governance, Global Value Chain, coffee, Corporate Social Responsibility, sustainability

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1. Introduction

For millions of smallholder families in the Global South, the production of tropical commodities such as coffee, cocoa, tea, palm oil or sugar is the main income source upon which they rely for their livelihoods. Despite considerable efforts from national institutions, businesses and development communities over recent years to improve smallholders' conditions, the production of these goods still presents great challenges in the realms of environmental, social and economic sustainability. In particular, many smallholders struggle to cope with low and volatile commodity prices, adverse and unpredictable growing conditions due to climate change, low yields, dangerous working conditions and little access to training or education (DeFries et al., 2017). Improving these conditions has been recognized as a major aim aligned with the United Nations' Sustainable Development Goals (UNCTAD, 2015).

The coffee sector is one of the largest industries that connects producers from the Global South with consumers in the North and has historically led efforts to make supply chains more sustainable (Kolk, 2005; Levy et al., 2016). The first Fair Trade initiatives strove to provide coffee farmers with a more equitable price (Bacon, 2005); one of the major awareness-raising campaigns in consuming countries centered on the coffee crisis of 1999-2002 (Gresser and Tickell, 2002); and alternative third-party certification schemes were piloted on coffee farms and expanded to other sectors (Manning et al., 2012). More recently, directly traded and single-origin agricultural products emerged first in coffee (Wilson and Wilson, 2014) and were later replicated in cocoa and other crops. Trends within sustainability governance in coffee may thus be indicative of broader changes in the global landscape of sustainability initiatives. This flagship position of the coffee sector in sustainable and responsible value chain organization, as well as the intrinsic importance of improving the livelihoods of 25 million smallholder farmers, makes it imperative to closely monitor the evolution of the concept and implementation of sustainability in coffee.

The leading idea to date, the concept of sustainably certified coffee, gained prominence in the 2000s, leading to the emergence of numerous certification schemes as important market actors (Auld, 2014; Manning et al., 2012). In general, such Voluntary Sustainability Standards aim to improve the social and environmental sustainability of farm-level production through the enforcement of norms and rules while increasing economic sustainability through productivity improvements or price premiums (Potts et al., 2014). As challengers to the status quo, NGOs and certification organizations have assumed important leadership roles in defining sustainable coffee production through their engagement with each other and with supply chain actors (Giovannucci and Ponte, 2005). In this sense, they have attempted to create an alternative, voluntary institutional structure which aims to regulate the coffee sector's sustainability through non-state market-driven (NSMD) governance mechanisms (Bernstein and Cashore, 2007; Cashore, 2002). These mechanisms can be defined as "deliberative and adaptive governance institutions designed to embed social and environmental norms in the global marketplace that derive authority directly from interested audiences, including those they seek to regulate, not from sovereign states" (Bernstein and Cashore, 2007, p. 348).

Yet, the voluntary nature and the interdependence between certification and market actors have created, as Levy et al. (2016, p. 2) discuss, a "dialectic process of 'revolution/restoration', or passive revolution, whereby value regimes assimilate and adapt to potentially disruptive challenges,

transforming sustainability practices and discourse”. In this process, businesses and NGOs continue to engage in political, contested negotiations over the definition and organization of sustainable value regimes. Since multinational firms are commonly the dominant actors, civil society demands risk being integrated into current business practices, diluting the original mission of equilibrating relative power in the marketplace (Levy et al., 2016). Indeed, as competition for market shares increased, certification organizations have both considerably converged in their standards and adapted them to the preferences of industry actors (Reinecke et al., 2012). One such preference is the use of voluntary sustainability standards as a chain governance tool that increases the coordination and information exchange between actors (Muradian and Pelupessy, 2005). By assuming more direct responsibility for sustainability in their value chains, value chain actors therefore shape the definition and implementation in a way that allows them to extract maximum value, be it through improved quality, supply chain management or supplier control (Auld et al., 2015; Dauvergne and Lister, 2012; Elder et al., 2014; Muradian and Pelupessy, 2005; Reynolds, 2009). It is critical to trace how this process takes place in the coffee supply chain to accurately monitor whether sustainability efforts continue to be in line with their initial purpose.

Since supply chain sustainability relies crucially on the main industry actors’ commitments, involvement and priorities, it is however impossible to accurately reflect on sectoral sustainability initiatives without understanding the underlying distribution of influence in the marketplace. The coffee industry is a sector that changes rapidly and where relevant actors continuously emerge and disappear as global companies adapt their brand mix, NGOs take on new focal areas and industry organizations are founded and dissolved. In the last years, this pace of change has only accelerated, overthrowing many assumptions about key players, trends and tendencies in the industry.

This article thus has two interlinked objectives: To provide an updated characterization of the coffee sector’s distribution of power and market opportunities from a Global Value Chain perspective, and to trace how these power dynamics are redefining the sector’s non-state market-driven (NSMD) sustainability governance schemes.

It is based on an in-depth analysis of recent literature, documents and data related to the coffee sector, as well as over 60 expert interviews and observations gathered from field work in Costa Rica, Colombia, Honduras and Guatemala and the attendance of various industry events between 2015 and 2016. Section 2 will present the conceptual framework and important academic antecedents; Section 3 will summarize the methods of analysis; Section 4 will present results of both the Global Value chain analysis and the connected developments in sustainability governance; Section 5 will discuss the results and suggest areas of future research interest; and Section 6 will conclude.

2. Conceptual framework

There has been increased recognition among scholars that in light of globalization and the ubiquity of transnational supply chains, it is vital to examine the full value chain of a given product to understand its organization and to identify opportunities for producer ‘upgrading’ (that is, moving producers into positions where more value is created) and rural development (Bamber et al., 2014; Kaplinsky and Fitter, 2004). Simultaneously, the economic, environmental and social challenges of smallholder producers of tropical commodities were taken up in the global governance literature by examining the emergence and evolution of non-state market-driven instruments to govern sustainability (Auld

et al., 2009; Bernstein and Cashore, 2007; Cashore et al., 2004). This section will discuss both approaches to analyzing the governance of a commodity chain and its sustainability and argue that combining insights from both leads to a powerful framework of analysis for understanding the continued permutations of private supply chain governance.

2.1. The Global Value Chain approach

A growing number of scholars have found it instructive to study intra-industry ties and dynamics among supply chain actors. A popular approach is the Gereffian Global Value Chain (GVC) framework (Gereffi, 1999, 1994). Gereffi (1999)'s seminal work aims to conceptualize the links in international commodity chains in order to analyze power relations and decision-making processes. It makes the distinction between producer-driven and buyer-driven commodity chains, describing the latter as "industries in which large retailers, marketers, and branded manufacturers play the pivotal roles in setting up decentralized production networks in a variety of exporting countries, typically located in the third world" (Gereffi, 1999, p. 41). Crucially, "the main leverage in buyer-driven chains is exercised by retailers, marketers, and manufacturers through their ability to shape mass consumption via strong brand names and their reliance on global sourcing strategies to meet this demand" (Gereffi, 1999, p. 43). Studies that have applied the GVC in the coffee value chain concur that the buyer-driven typology clearly describes the global coffee commodity chain (Bamber et al., 2014; Bitzer et al., 2008; Fitter and Kaplinsky, 2001; Ponte, 2002).

In order to understand the impact of buyer-driven chains, it is crucial to understand which downstream actor holds the most power; how that power is exercised; and what institutional arrangements are in place that might mitigate or exacerbate the unequal power balance (Gereffi, 1994). For this purpose, Gereffi (1999) proposes an analysis of four components of a global value chain: its input-output structure, its geographical coverage, its governance structure, and its institutional framework. The input-output structure is frequently illustrated through supply chain diagrams that highlight the different stages of production and the responsible actors. The analysis of geographical coverage puts a focus on identifying the lead firms within each segment of the value chain and deriving country-level positions within the supply chain. Regarding governance structures, Gereffi et al. (2005) showcase that differing levels of power asymmetry and coordination in the marketplace result in five types of value chain governance – hierarchical, captive, relational, modular, and market governance. This in turn will significantly influence decision-making within the value chain and should thus be identified for different sub-products within the value chain. Finally, the institutional analysis highlights local, national and international conditions and policies that affect the global value chain (Gereffi and Fernandez-Stark, 2016).

Though very similar in focus, the governance of a supply chain's sustainability has generally been evaluated through a different lens, that of non-state market-driven sustainability governance, which will be presented below.

2.2. Non-state market-driven sustainability governance

The concept of non-state, market-driven (NSMD) governance was first identified as a distinct form of supply chain governance by Cashore (2002) and Cashore et al. (2004). According to their definition, NSMD governance schemes have five distinguishing attributes: the central role of the market (purchasers actively demand the regulated products); the absence of state coercion (states do not use their sovereign authority to require rule adherence); the institutionalized governance mechanisms (procedures allow for adoption, inclusion and learning over time across a wide range of stakeholders); the focus on reconfiguring markets (addressing social and environmental problems that had previously been externalized); and the presence of enforcement mechanisms (compliance with the scheme must be verified) (Auld et al., 2009; Bernstein and Cashore, 2007; Cashore, 2002; Cashore et al., 2004). The earliest attempts to govern sustainability in the coffee market, Voluntary Sustainability Standards such as Fair Trade or Rainforest Alliance certification, clearly adhere to these conditions, making them a fitting example of NSMD governance schemes (Auld, 2014, 2010).

Cashore (2002) and Bernstein and Cashore (2007) note that moving from the initial emergence phase to a situation where standards carry ‘cognitive legitimacy’ – that is, where acting outside of their established norms becomes unthinkable – requires actors to go beyond adopting a short-term, rationalist ‘logic of consequences’ based on cost-benefit calculations. Rather, a ‘logic of appropriateness’ of the evaluated rules and institutions applies, where actors make “the commitment to fulfill an identity without regard to its consequences for personal or group preferences or interests” (March and Olsen, 1996, p. 254). The challenge, then, is to expand NSMD governance in a way that simultaneously changes norms of appropriateness of both the market system (such as moving toward a socially embedded conception of markets) and the market actors (by redefining firms’ identities toward being social responsible actors) (Bernstein and Cashore, 2007).

Auld et al. (2009, p. 190) provide five alternative scenarios how NSMD governance may develop over time: in addition to (1) Bernstein and Cashore’s (2007) full-fledged political legitimacy of NSMD schemes, in which “the full range of stakeholders within a sector recognize their membership in a political community that grants an NSMD system the authority to govern”, they see the possibility of (2) NSMD as a strong, but niche-focused system without the strength to address global challenges; (3) a weakly institutionalized NSMD system, where “NSMD certification gains widespread support, but [is] unable or unwilling to address the enduring social and environmental problems for which it was originally created”; (4) a hybrid public/private system where governments require some parts of the value chain to adhere to NSMD rules; and (5) a scenario that “brings the state back in” through a governmental takeover of sustainability governance.

At the time of writing, Bernstein and Cashore stated that it was too early to predict whether NSMD systems would enter phase III, and Auld et al. (2009) encouraged further research into what scenario would apply in the coffee sector. This paper aims to contribute to this research field through a summary of recent changes and initiatives at the level of sustainability governance and their linkage to wider-spread changes in the supply chain.

2.3. Linking GVC analysis and NSMD frameworks

In order to explain the development of sustainability governance initiatives in the coffee sector, it is highly instructive to link Global Value Chain analysis to the non-state market-driven governance perspective. This is due to three primary reasons: First, the distribution of power in the marketplace has a crucial impact on the role of the market and its incentives in non-state market-driven schemes. NSMD scholars highlight that “supply- and demand-side pressures may support different NSMD governance systems for very different reasons, with fundamental implications for the nature of NSMD governance” (Cashore, 2002, p. 511). GVC perspectives can shine light on the relative strength of those pressures and provide explanatory power for particular types of evolutions.

Second, in the case of sustainability within agricultural value chains, the way sustainability governance is implemented is inexorably linked to the governance of the supply chain and its products per se. Market, relational or hierarchical supply chain governance structures will provide fundamentally different preconditions for sustainability governance frameworks to emerge (Bray and Neilson, 2017); furthermore, it is likely that sustainability governance schemes that are strongly aligned with the pre-existing supply chain governance structures will have lower implementation costs for market actors and thus greater success in the ‘sustainability marketplace’ (Reinecke et al., 2012).

Finally, the identification of the institutional framework a value chain is embedded in contributes to the delineation of the regulatory space that is unoccupied by state and quasi-state actors and thus free to be claimed by non-state governance schemes. As highlighted by Auld et al. (2009), the occupation and/or free-ing up of this regulatory space is a dynamic process and interacts with the perceived effectiveness of private governance initiatives; in extreme cases, when private governance is found to be illegitimate or ineffective, this space may be reclaimed by governments. This, in turn, would have important consequences for all actors of the global value chain of the commodity in question, as well as non-state governance actors in the sustainability sphere. I aim to present first evidence of this interactive process within the present paper. The next Section introduces the methods used for this analysis.

3. Methods

Global Value Chain analyses typically are based on secondary data analyses and interview data with key industry experts (Gereffi and Fernandez-Stark, 2016), while NSMD governance approaches benefit from document and discourse analyses as well as expert interviews and participatory observation of key events (Auld, 2014; Cashore et al., 2004). This study thus combines a variety of sources.

First, I conducted a multidisciplinary literature review that spanned the disciplines of political science, political economy, development economics, management and sociology in order to construct an accurate overview of the most up-to-date reviews of the coffee value chain and its sustainability. I furthermore collected secondary data on the market shares and influence of various actors of the supply chain, relying mainly on published statistics and acquisition and merger announcements in order to identify the current lead firms. Then, I engaged in primary document

analysis of companies' websites, statements and published interviews to identify their commitments and stance regarding sustainability initiatives.

This secondary data was combined with primary data stemming from expert interviews as well as participant observation during fieldwork in Latin America (Costa Rica, Colombia, Guatemala and Honduras) between 2015 and 2016. I conducted over 60 semi-structured interviews with coffee producers, cooperative managers, exporters, traders, roasters and café owners, 53 of which were recorded with an audio recorder and 10 of which were recorded by hand. The distribution of the different value chain actors can be seen in Table 1. All participants were assured anonymity in order to increase confidence and the veracity of their statements. Furthermore, I attended 9 coffee industry events at various levels of organization: the *Semana Internacional de Café*, a meeting point for large-scale coffee stakeholders, roasters and traders, in 2015 and 2016; the 2016 Forum of the Specialty Coffee Association of America, a gathering of specialty coffee actors; the first General Assembly of the Global Coffee Platform, an incipient platform aiming to become the central unifying force for large-scale sustainability efforts; the first World Coffee Producers' Forum, organized in 2017 in Medellin, Colombia; three producer fora in Costa Rica and Honduras focused on coffee quality and sustainability; as well as a local consultation regarding the new Rainforest Alliance standard in Honduras. These events provided an in-depth setting to observe the intra-industry conversation regarding sustainability and many opportunities for additional informal dialogue with industry members. They were embedded in a larger data collection effort on field-level impacts of sustainability certifications in Colombia, Honduras and Costa Rica, in the process of which I was furthermore able to converse with a significant number of coffee farmers on their views of the industry and its development and to test the analytical conclusions presented below through continuous feedback processes.

Interviewee type	Traders	Roasters	Producer organizations	Institutions	NGOs	Fellow researchers
Number of interviews	18	13	10	5	10	6

Table 1: Overview of expert interviews

4. Results

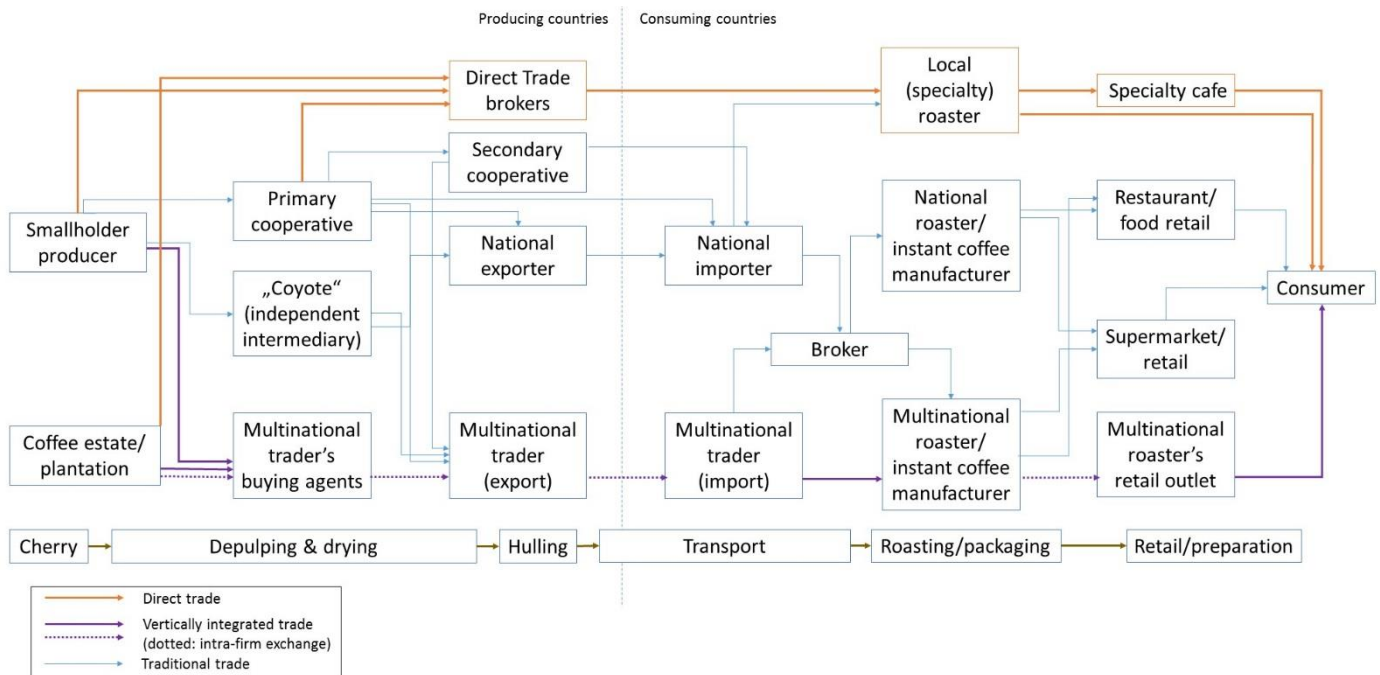
4.1. An updated Global Value Chain analysis of the coffee sector

4.1.1. The input-output structure of the current coffee value chain

Despite the fact that coffee is *prima facie* a commodity with a relatively straightforward production process – in its most simple form, the main agriculture product, the coffee bean, is only roasted, ground and steeped in water for consumption –, its supply chain is surprisingly complex, with a multitude of actors that may be involved at each processing stage.

The coffee bean is in effect the seed of a fruit, the coffee cherry, which needs to be grown, peeled, fermented, dried and hulled before reaching the stage of exportable green coffee. These primary processing steps are almost uniformly located in the more than 80 coffee-producing countries, a club that is limited by the growing conditions for coffee and thus clustered around the equator between the Tropic of Cancer and the Tropic of Capricorn (ICO, 2014). After transport to the consuming country, green coffee is roasted, possibly freeze-dried (in the case of instant coffee) or ground, packaged, and distributed to retailers and cafes.

Figure 1: The schematized coffee supply chain. Source: own illustration.



Traditionally, coffee has followed the fate of agricultural commodities of being mass-produced and marketed through a complex system of interactions between on-the-ground and financial actors that increases transaction costs and provides many opportunities for rent-seeking, as seen in Figure 1. Differentiation is limited to basic quality conventions, country provenance and type of bean produced (the coffee market differentiates between lower-quality Robusta and higher-quality Arabica coffee) and traceability is a constant challenge (interview with coffee trader, 05.03.2016). This mostly concerns the grand share of mainstream coffee (lower-grade Arabica and Robusta) whose prices are decided and speculated upon at the New York and London stock exchanges, the so-called C-market. In this channel, weather shocks in growing regions such as Brazil or Vietnam can cause highly volatile prices and the continued economic sustainability of growers is only possible with high levels of productivity (ICO, 2014). This is, however, also the channel through which the majority of certified coffee is brought to market, with buying agents (cooperatives, local or multinational traders) often responsible for the coordination, implementation and quality control of smallholder certification (interviews with producer organizations and traders, 2016).

Yet, the last decades have seen considerable progress in efforts to shorten the value chain through backward linkage and integration. In particular, an increasing focus on quality differentiation has led

to two types of supply chain shortening – one small-scale, under the Direct Trade umbrella, and one large-scale, through the collaboration of large roasters and exporters.

The Direct Trade model consists of small roasters that handpick coffee micro-lots based on a complex scoring system and ideally source directly from individual estates, smallholders or cooperatives, aided in the majority of cases by ‘connective businesses’ who identify promising producers and take care of regulatory and logistic hurdles (Borrella et al., 2015). The system rewards high quality, small quantities, and high levels of regional and product differentiation (Borrella et al., 2015). Selling directly traded specialty coffee is now seen as one of the most promising avenues for small-scale producers to increase their profit margins and become independent from stock market pricing (Wilson and Wilson, 2014), since specialty consumers are highly sophisticated and willing to pay prices that are triple or quadruple that of mainstream coffee (Borrella et al., 2015).

On the other side, the vertical integration of both traders and roasters have created a quasi-direct value chain which in the most extreme case consists of only two actors, the multinational trader and roaster with their respective subsidiaries (Macchiavello and Miquel-Florensa, 2016). These actors focus their on-the-ground strategy on products with a high potential of added value, which is why they are frequently seen in high-altitude, high-quality regions (Grabs et al., 2016). This set-up increases product traceability and quality control, and is an aiding factor in implementing more advanced sustainability certifications as well as firm-owned schemes at a larger scale; however, it also exacerbates issues of unequal power distributions between sellers (when coffee farmers are the first link of the chain), buyers and consumers (interviews with producer organizations and NGOs, 2016-2017).

4.1.2. The influence and geographical distribution of lead actors in the coffee value chain

The geographical analysis component of the Gereffian Global Value Chain framework is based first on the identification of the lead firms in each segment of the value chain, and their geographical provenance. This exercise also allows us to determine the relative power in the value chain, which will be instructive for the following governance structure analysis.

4.1.2.1. Re-consolidation of roasters and retailers

The global retail coffee market has undergone considerable rearrangement in the last decade (Ponte, 2002; Statistica, 2016a). When comparing Figures 2 and 3 on the shares of global retail coffee market that individual firms hold, it first becomes apparent that only two companies (Nestlé, from Switzerland, and Tchibo, from Germany) have endured as top coffee roasters. The rest of the sector has been undergoing a process of deconsolidation fueled by greater diversity in the marketplace, followed by recent reconsolidation efforts (compare also Figure 3). Remarkably, the share of “other” players has increased significantly, from 31% to 47%. This is likely due to the greater size of the coffee sector - production has grown from around 100 million 60-kg bags in 1998 to 152 million in 2014 (ICO, 2016a) - and the larger geographical dispersion of consumption (compare Figure 5). In particular, domestic consumption in producing countries has almost doubled during this period (ICO,

2016b). Finally, in some countries, such as the US, specialty coffee now makes up over 50% of the total market value (SCAA, 2015), giving smaller roasters higher value market shares.

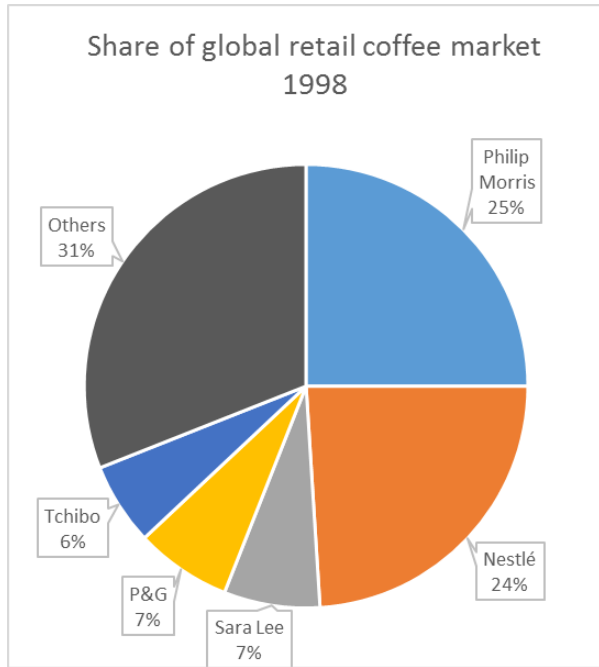


Figure 2. Source: Ponte (2002)

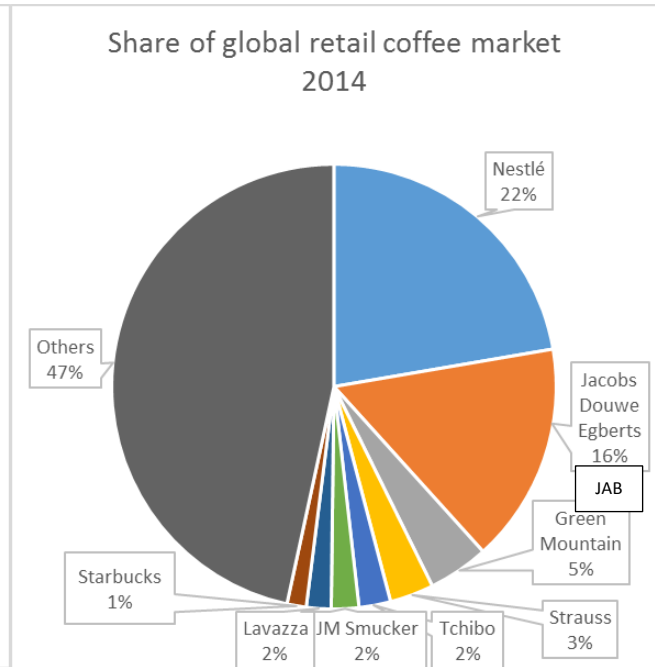


Figure 3. Source: Statistica (2016)

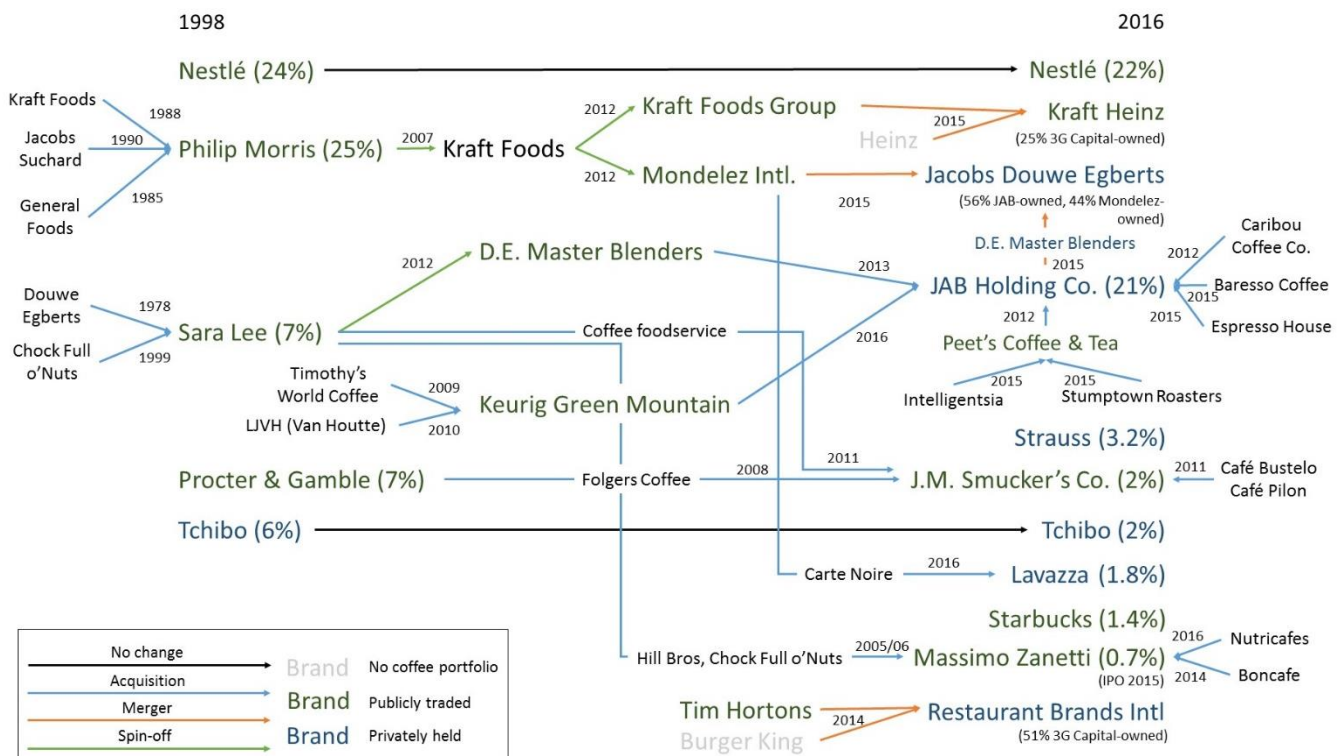


Figure 4: Sales, spin-offs and acquisitions in the coffee marketplace. Source: Own illustration

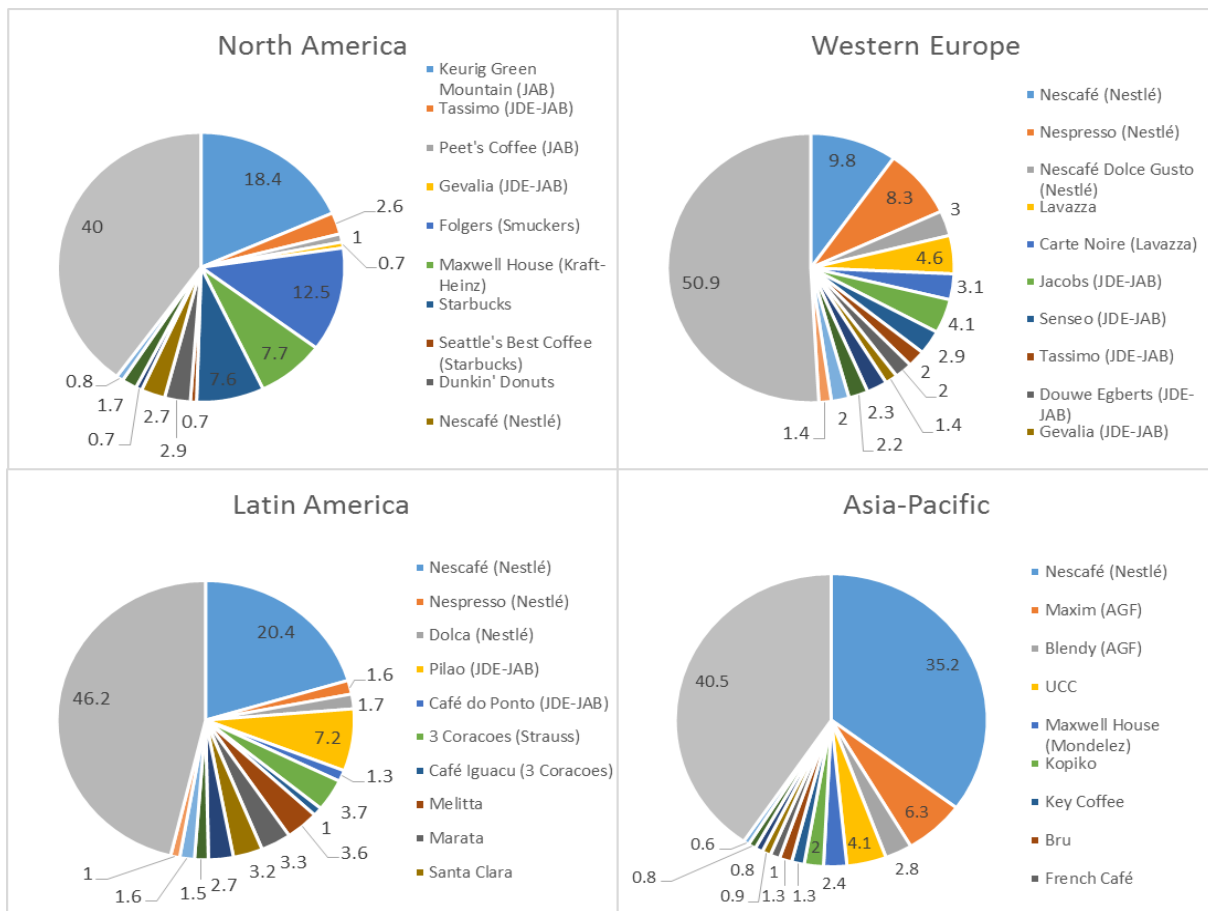
The most important recent shift occurred from 2012 onward. As the economy recovered from recession and the new consumer segment of ‘millennials’ acquired more spending potential, the coffee market was recognized as an interesting long-term investment opportunity for private equity firms such as the Germany-based JAB Holding Co. (Gasparro, 2015). This initiated a re-consolidation movement of a sector that intermittently had become much more diverse, with JAB Holding Co. acquiring D.E. Master Blenders and merging it with Mondelez Intl., creating Jacobs Douwe Egberts (JDE), now the second largest coffee roaster globally after Nestlé (Armstrong, 2014). Subsequently, it went on a virtual buying spree, acquiring Peet’s Coffee & Tea, Caribou Coffee Co., Intelligentsia, Stumptown Roasters and finally Keurig Green Mountain on its quest to establish a coffee empire spanning the different consumer segments that had emerged in the previous 10 years (Cohen, 2015). After years of relatively unchallenged market leadership, Nestlé was suddenly facing a serious contender for global dominance of the coffee market (Gretler, 2015; Key, 2015). This consolidation reverberated across the industry, causing other roasters such as Lavazza and Massimo Zanetti to strengthen their own portfolios (Landini and Clarke, 2016).

Importantly for the analysis of market leadership, there are in fact various subsectors in which these roasters compete beyond the traditional roasted and ground market: the freeze-dried, soluble segment (in which Nestlé’s Nescafé dominates); the single-serve capsule segment (which has been captured by JAB’s Keurig Green Mountain in North America and Nestlé’s Nespresso in Europe); traditional espresso coffee (led by illy and Lavazza); out-of-home specialty coffee (still the stronghold of Starbucks); as well as Third Wave and sustainable coffees (Nisen, 2014). This segmentation allows for considerable profit margins, ranging from 20% to 38% in each product category for leading roasters in 2015/16¹. It also influences roasters’ regional market power: for instance, since single-serve coffee is now the most popular form of coffee consumption in the United States, JAB’s Keurig is the strongest roaster (with 18.4% of the market share) there; in the rest of the world, the popularity of soluble coffee and Nestlé’s monopoly position in that sector make it the market leader, with 35.2% of market share in Asia-Pacific (Nisen, 2014).

This overview shows that despite increasing diversity in consumption locations, there is still considerable dominance of European and U.S.-based multinational roasting and retailing companies at the final stage of customer-oriented sales. Furthermore, the reorganization at the top has created competitive pressure that led coffee companies to refocus on their financial bottom line (Gretler, 2015; Key, 2015), which may decrease their commitment to sustainability actions (interview with coffee trader, 03.06.2016). As of mid-2017, JDE had not published any concrete commitments toward sustainable coffee sourcing for the future, while Nestle announced that it would review its commitment to source 90’000 tons of standard-compliant coffee “to re-align it towards a reinforced emphasis on enabling positive impacts on coffee farmers, their communities and landscapes” (Nestle, 2017). Section 4.2 will present alternative sustainability strategies that may be under consideration by Nestle.

¹ Nestlé’s powdered and liquid beverage category had trading operating profit margins of 21.3% in 2015 (Nestlé, 2016), while its single serve categories such as Dolce Gusto and Nespresso are estimated to have operating margins of 25% (Gretler, 2015); Smucker’s retail coffee segment profit margin was 29.9% in 2016 (The J.M. Smucker Company, 2016); and Keurig’s single serve packs had a gross margin of 38.6% in 2015 (Statistica, 2016b).

Figure 5: Retail market share by brand and region. Source: Nisen (2014).



4.1.2.2. Multinational traders and the financialization of coffee buying

Ponte (2002) and Newman (2009) already noted a tendency in the 2000s for regional coffee traders to falter amidst difficult market conditions and financing bottlenecks and for multinational traders to dominate the landscape. This trend has continued, and the general distribution of market power in the green coffee market in 2014/15 looks remarkably similar to the situation 16 years ago. As in the roasting sector, a number of additional important mergers have occurred. ED&F Man have acquired Volcafe, Esteve has reemerged as ECOM, purchasing Cargill's coffee division as well as Armajaro, Noble Agri was bought by the state-owned Chinese commodity trader COFCO, and new global players from emerging economies such as OLAM (Indonesia) and Sucafina (Brazil) have gained important market shares².

² Own illustration based on (Bolton, 2015; ceo Magazine, 2015; Cohen, 2016; Delgado and Nicholson, 2012; George, 2013; ICO, 2016c, 2016d; IFC, 2012a; Neumann Kaffee Gruppe, 2016; Verma, 2015)

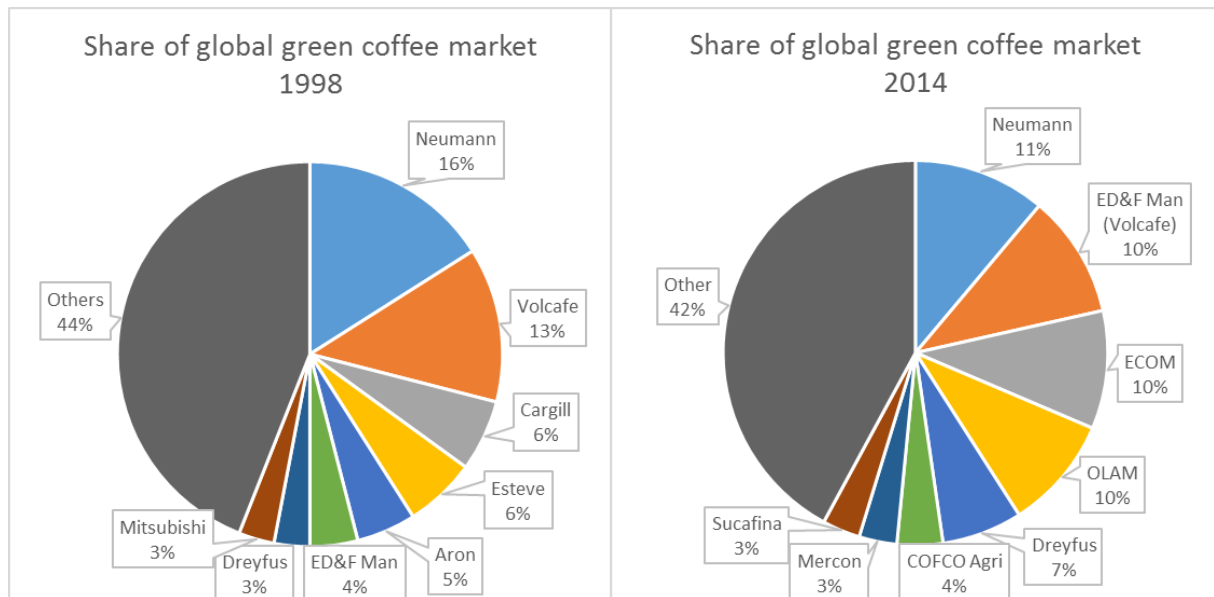


Figure 6. Source: Ponte (2002)

Figure 7. Source: Own illustration, based on Bolton, 2015; ceo Magazine, 2015; Cohen, 2016; Delgado and Nicholson, 2012; George, 2013; ICO, 2016c, 2016d; IFC, 2012a; Neumann Kaffee Gruppe, 2016; Verma, 2015.

With the exception of Neumann Kaffee Gruppe, all of the leading coffee traders are engaged in trading other commodities, which insulates them to a certain extent from price and contract risk in the coffee sector. ED&F Man also trades sugar, grains and liquid products; ECOM is also leading in cocoa, cotton and sugar; OLAM is involved in cocoa, coffee, cashew, rice and cotton; Louis Dreyfus' portfolio includes cotton, dairy, fertilizers, grains, juice, metals, oilseeds, rice and sugar; and COFCO Agri is mainly focused on grains and oilseeds, sugar and cotton in addition to coffee.

The increasing financialization of the sector and the volatility of the market has further expanded traders' portfolios: many offer price risk management services and are active in the commodity derivatives market in order to hedge and speculate on the movement of the coffee price (Newman, 2009). The traders' concentration also increases their bargaining power over producers in determining the terms and specifications of the contracts, including a shift from fixed-price-forward to price-to-be-fixed contracts, in which the transmission of volatile prices is much higher (Newman, 2009). Only sophisticated knowledge of and access to hedging instruments in the futures market can then ensure that profitable prices reach the producer level. Indeed, the skill sets of managing price risk and using hedging instruments is seen as indispensable for coffee-selling cooperatives and is being taught in a growing number of international development initiatives (Kraft, 2015). Yet, the absence of the necessary business acumen as well as financial capital and organizational size limits many producer groups' access to these activities, exposing them to significant volatility and shifting the balance of power in favor of large traders.

These leading traders also dominate the coffee landscape on the ground in growing communities. Not only do they own a large part of the processing and storage infrastructure, and in some cases even coffee farms³, in most coffee-producing countries they are also the focal point of interaction

³ Neumann Kaffee Gruppe owns 7,500 ha of coffee plantations (Neumann Kaffee Gruppe, 2016), OLAM currently holds 5,000 ha with a target of 15,000 ha (Verma, 2015), and Volcafe has plans to create a \$52

between farmers and the downstream supply chain (interviews with traders, 2016). They engage in data gathering to construct harvest estimations, provide processing services and trainings, and relay demand information to farmers, including the demand for sustainably certified coffee (Grabs et al., 2016). As explained in Section 4.2., this growing responsibility also makes them lead actors for the implementation of sustainability projects and certifications (interview with trader, 17.07.2016).

4.1.2.3. Producers and their level of influence

The geographical coverage of coffee production is subject to subtle changes. While the advent of specialty coffee has allowed producing countries in Central America and certain African countries to maintain small market shares, productivity has stagnated in these regions, while yields have steeply increased in South America and Asia, mainly thanks to Brazil and Vietnam. While these two countries accounted for 29% and 11% of global production in 2002/3, respectively, they represented 36% and 18% in 2013/14, and could reach 44% and 21% in 2024/25 according to forecasts (Verma, 2015). Coupled with growing future demand, industry experts warn that the sector might become too dependent on these two origins, which subsequently reduces resilience to weather or currency shocks (Verma, 2015).

On the ground, producers and the level of their organization and sophistication differ drastically within and between coffee-producing countries. While many smallholder farmers continue to live in isolated rural conditions with low access to education and off-farm work opportunities, and rely on intermediaries or cooperatives to bring their products to market, others have gained sophisticated knowledge about premium markets and differentiation (interviews with producers' organizations, 2015-2017).

In particular, the direct trade and high-quality movement has allowed individual producers to get to know customers and cater to their specific demands (Carvalho et al., 2014; Parrish et al., 2005). Leading cooperatives, particularly from Latin America, commonly attend trade fairs, use hedging instruments, create their own roasted coffee brands, and may even own coffee shops (Coopedota, 2016; Cooperandes, 2016). A minority of individual producers – typically those that participate in coffee excellence competitions and use the services of direct trade connective businesses – also host specialty coffee buyers on origin tours and negotiate directly about specific methods of preparation and direct sales (Borrella et al., 2015).

Social media and ITC technology advances enable outreach efforts even for cooperatives of lower sophistication, for instance through the use of Facebook pages to connect to their consumers (Aguadas Coop, 2016). In some countries, such as Colombia, the spread of mobile phone technology furthermore allows relatively low-cost access to the internet and thus exchange rates, stock market prices and supply and demand estimates, though most farmers' understanding of these complex factors remains quite limited (interview with producers' organization, 01.08.2016).

In general, however, the level of dependency of producers on world market prices is overwhelmingly high, and low and volatile prices, coupled with unpredictable growing conditions, are still their main concern (interviews with producers' organizations, 2015-2017). Particularly those that sell to

million, 4,000-hectare coffee plantation in the Philippines after a similar project in Myanmar fell through (Larano, 2015).

intermediaries are often in positions of very low bargaining power and high dependency (interview with NGOs, 2016-2017). It should also be noted that many of the outreach and capacity-building initiatives are supported (ideationally and financially) by downstream coffee chain actors such as roasters and retailers, compounding the complex picture of power and dependency in the coffee value chain (Bitzer et al., 2008).

4.1.2.4. A buyer-driven market environment

This overview provides a complex picture of relative power relations in the supply chain. On the one hand, the influence of large scale financial actors has strengthened, as the coffee futures market has attracted speculators and hedge funds (Fickling, 2016; UNCTAD, 2011; Verma, 2015), while diversified trading companies use sophisticated strategies to profit from intertemporal price spreads (Newman, 2009). On the other hand, there is increasing evidence that the described reconsolidation on the roasters' level has put added pressure on all upstream actors, in particular traders and growers, to work on slimmer margins. Industry sources speak of greatly increased price pressure on green coffee from top roasters as they aim to preserve their market shares (interviews with traders, 2016). Furthermore, roasters owned by investment funds such as Tim Hortons, JDE, Keurig Green Mountain and Peet's Coffee & Tea started to unilaterally extend their net financing terms from an industry standard of 30 days to up to 120 days (Cohen, 2015). This move increased traders' required capital stocks and forced them to extend their credit lines, in effect serving as cheap sources of capital for roasters. As consolidation continues, such industry changes can be dictated by few large players and traders have the choice to acquiesce or lose crucial clients. Furthermore, Elder et al. (2014) highlight the rising supply chain power of big retail chains such as Walmart, Costco, or Marks & Spencer, as well as foodservice retailers like Starbucks, McDonald's and Dunkin' Donuts. This gives these firms considerable influence in defining the type and quality of the coffee they provide to consumers, including its sustainability characteristics (Dauvergne and Lister, 2012; Elder et al., 2014). Elder et al. (2014) contend that retailers, just like roasters, use the sustainability attribute to exploit the growing markets and higher profit margins in the eco-friendly consumer segment, and leverage their power to capture high shares of the mark-up.

It thus stands to argue that Northern-based roasters and retailers continue to be the coffee chain's key lead actors, who "exert control over information exchange and production activities, and therefore are able to shape the functional division of labor along the chain and to set entry barriers, [...] a key mechanism through which economic profits may be concentrated in particular segments" (Muradian and Pelupessy, 2005, p. 2031), with multinational trading companies originating from the North and BRIC countries acting as important intermediaries.

4.1.3. The coffee value chain's governance structure(s)

Gereffi et al. (2005) distinguish five basic types of value chain governance: market linkages (where the costs of switching between partners is low for both suppliers and buyers); modular value chains (where suppliers make products according to the buyers' specifications); relational value chains (where complex and long-term interactions between suppliers and buyers create a high degree of interdependency and asset specificity); captive value chains (where small suppliers are dependent on

much larger buyers and there is a high degree of monitoring and control by lead firms); and hierarchical governance (characterized by vertical integration). Applying this typology to the coffee value chain as described above shows an interesting divergence between the three previously identified marketing channels. While the traditional trade channel still relies primarily on market linkages, in particularly the New York and London stock exchanges as trading platforms and highly codified product conventions to reduce complexity, the two emerging channels – Direct Trade and vertically integrated multinational chains – have shifted to other types of value chain governance. Direct Trade in its purest form epitomizes the idea of relational value chains and long-term, personal relationships that rely on trust and reciprocity. Vertically integrated chains managed by multinational traders and roasters, in turn, represent a combination of hierarchical (within-firm) and modular (between-firm) value chain governance, with captive value chain governance present at the lowest level when independent coffee growers, rather than trader-owned plantations, are the suppliers of the raw product.

Governance type	Complexity of transactions	Ability to codify transactions	Capabilities in the supply-base	Degree of explicit coordination and power asymmetry
Market	Low	High	High	Low
Modular	High	High	High	
Relational	High	Low	High	
Captive	High	High	Low	
Hierarchy	High	Low	Low	High

Table 2. Key determinants of global value chain governance. Source: Gereffi (2005, p. 87)

Some of the main reasons for these different types of supply chain organization are suggested by Gereffi et al. (2005, p. 87) to be differences in the complexity of transaction, the ability to codify transactions, and the capabilities of suppliers (compare Table 2).

We can take note that the introduction of sustainability considerations in addition to traditional product characteristics at first increased the complexity of transactions, leading to relational governance structures in niche markets such as Fair Trade. However, as Voluntary Sustainability Standards increasingly codified and standardized sustainability, mirroring ISO production standards (Levy et al., 2016), it was possible to re-integrate sustainable coffee into market governance structures, an essential step for its mainstreaming (Raynolds, 2009) – at least at the trader-buyer interface. However, in many instances, the capabilities of implementing the certification criteria continue to be limited among single smallholder farmers, leading to the emergence of trader-led certification groups and conditions of captive supply chain relations (Grabs et al., 2016).

Quality has become the next essential differentiation criterion which has thus far defied comprehensive codification, though such efforts are underway (Carvalho et al., 2014). This addition thus explains the movement back toward relational, modular and captive governance structures in the quest of buyers for reliable sources of high-quality coffee. However, this segment of the market –

though poised to see the highest growth rates – still only makes up a miniscule share of the global coffee market, while the main future growth markets lie in East and South Asia (ICO, 2015), where populations prefer cheap instant coffee and do not require sustainability and quality differentiation. Thus, market governance – frequently with captive governance of producers in the case of sustainable coffee – is likely to continue to be the most widespread mode of supply chain governance in coffee.

4.1.4. Institutional framework

Since the dissolution of the International Coffee Agreement in 1989 (Ponte, 2002), there has been no alternative formal institutional framework to govern prices, and there seems to be a political and scientific consensus that such a return to supply management is unlikely (Muradian and Pelupessy, 2005). Yet, simultaneously, coffee farmers face increasingly uncertain returns and livelihoods, leading to the revival of some domestic governmental and quasi-governmental institutions in providing income, credit and input support. Indeed, producing countries' governments went to different lengths in dismantling the institutions governing coffee exports. While in much of Africa marketing boards were abolished during the course of structural adjustment reforms, and some Latin American countries followed suit during periods of neoliberal leadership, other countries have maintained and indeed strengthened their coffee institutions (Romero, 2012; Talbot, 2002).

Lora (2013) gives an up-to-date overview of the extent of coffee sector governance in 12 leading coffee producers that account for almost 80% of world production. His analysis shows that the common assumption of non-intervention by producing countries highly oversimplifies the current institutional landscape. Out of 12 countries, four set minimum prices for export contracts (Ivory Coast, Costa Rica, Colombia and Brazil, though Brazil's is a non-enforceable reference price); six coffee institutions manage specialty coffee certifications; eight keep a register of export contracts; eight offer credit to coffee farmers; nine regulate export-level coffee quality; ten provide extension services and technical assistance by public institutions; ten are involved in international promotion activities; and 11 grant export licenses to exporters. On the flipside, eight of 12 countries impose taxes on coffee processing or exporting, though these contributions frequently fund the public extension or price support activities (Lora, 2013). Compare Appendix 1 for more information.

Coffee farmers are also supported through a variety of other public measures, such as producer income assistance (e.g. in Colombia during the 2012/13 harvest) (Minagricultura, 2016), price stabilization funds (in Brazil, Ivory Coast, Costa Rica, and Mexico) (Lora, 2013); and assistance in disease prevention and post-outbreak replanting, such as during the coffee rust outbreaks of 2008-11 in Colombia and 2012-13 in Central America (Avelino et al., 2015; FNC, 2013).

A number of coffee institutions are furthermore instrumental in driving forward sector transformations toward quality (Anacafe in Guatemala) or sustainability (FNC in Colombia and ICAFE in Costa Rica). Indeed, the latter two are in the process of developing their own sustainability and climate friendly certifications in an attempt to reclaim the discussion on how sustainable coffee should be defined (Nieters et al., 2015; Velez, 2016). This development can be seen as part of a new trend toward greater Southern involvement in the creation and implementation of Voluntary Sustainability Standards, which traditionally have been top-down and Northern-centric in structure (Schouten and Bitzer, 2015; UNFSS, 2016). Other recent initiatives have been the pursuit of

Geographic Indications based on specific regions as a strategy to access specialty markets (Teuber, 2008), and the FNC's call for a 'Global Economic Accord' based on farmer profitability (Brown, 2015), culminating in the first World Coffee Producers' Forum in July 2017. The Producers' Forum was dominated by the concern over falling real prices of coffee, and the Forum's closing statement called for a study to examine historical coffee and input prices in order to arrive at a sustainable minimum price to be implemented by the sector (Perfect Daily Grind, 2017).

Domestically, there is thus a complicated interplay between ever-stronger private multinational players, such as exporters, traders and roasters, and traditional or relaunched coffee institutions attempting to advocate on behalf of farmers, smoothen price volatility and maintain overall quality characteristics that lead to country-level differentials over the stock market price. These competing objectives are mirrored in the interpretation and implementation of various sustainability initiatives in the sector, as the next Section will show.

4.2. Buyer-driven sustainability governance in the coffee sector

These shifts in the structure and power distribution between actors in the coffee value chain have a strong impact on the sector's sustainability, since that sustainability is the sum of individual companies' and organizations' projects and strategies. According to a recent survey (Steemers, 2016), the vast majority of sustainability investments in coffee currently stems from the private sector. Of an estimated total annual budget of US\$350 million (ca. 2% of green coffee value), around US\$260 million are contributed by the private sector, with the rest made up by donors and other funding sources (Steemers, 2016). This arguably makes the sector's sustainability just as buyer-driven as the rest of its value chain, raising the question how the current market structure might affect sustainability governance in the future. This section will highlight trends in the current sustainability strategies of leading roasters and how they affect the sector.

First, the following two tables give an overview of how trends in global commodity chain governance impact sustainability initiatives and governance. Second, the following Section will present four current trends in sustainability governance in the coffee sector that stem from this reorganization of power structures.

	Coffee value chain characteristics post-2008	Impact on sustainability governance
Geography of production	Reconcentration after diversification as productivity and cost advantages of large producers (Brazil, Vietnam, Colombia, but also Honduras) leads to decrease in coffee surface in marginal countries	Importance of country partners (e.g. in Global Coffee Platform) increases Possibility of higher price volatility in the future if there is more reliance on fewer sources
Entry barriers to production	Stay high due to low median prices, increasing input costs and labor shortages, climate-change related pest and disease outbreaks such as coffee rust, and generational change; in some cases, slightly lower due to government or project support	Long-term supply worries and redefinition of sustainability as supply chain resilience and assurance (main goal of GCP and SCC) – transformation from competitive to pre-competitive discipline
Characteristics of internationally traded product	Continued dominance in volume of non-differentiated lower-quality Arabica and Robusta; improvements in traceability technology leads to increased differentiation in regional, quality, varietal and sustainability attributes of high-quality coffee in Arabicas and first attempts to differentiate high-quality Robustas	Continued challenge to mainstream significant price premiums for sustainable products; search for cost-effective alternatives Merger of quality and sustainability premiums for Arabica
Entry barriers to trade	Domestic trade and export: increased barriers due to price volatility and increased financialization of the sector; dominance in price-setting and storage capacity of international actors; in some countries bureaucratic hurdles for export International trade: Increased barriers consist of sustainability certification expectation with little to no price premium; entry requirement to specialty market governed by increasingly stringent cupping score cut-offs that are only discovered after export	Rise of international traders as preferred project implementation partner Disenchantment with third party certification at producer level, creation of own standards; focus on quality markets by smallholder producers continues to be a high-risk process
Distribution of total income generated along the chain	Continues to the advantage of consuming countries in mainstream market Increasing transparency of distribution in supply chain in specialty coffee movement	Contestation of 'sustainability' definition and focus on economic component by producing countries Producer empowerment through knowledge sharing and benchmarking
Geography of consumption	Saturation of traditional markets except for growth in value of specialty market (linked to generational change) Growth of new markets, also in producing countries (Brazil, Colombia)	Focus of Northern economic sustainability discourse on quality improvement and quality premiums Focus of Northern economic sustainability discourse on productivity in non-specialty regions
Typology of consumption	Globalization leads to income- and generation-based crystallization of types of consumption similar across countries: instant coffee (emerging economies, low-income segment); ground coffee (lower middle class, Baby Boomers); single-serve capsules (upper middle class, Gen X); specialty, milk-based and single-origin coffees (upper middle class, Gen Y and millennials)	Emergence of segment-specific sustainability strategies

Table 3: Characteristics of coffee chain restructuring (input-output framework and geographical distribution) (own content, structure adapted from Ponte, 2002)

Table 4: Characteristics of coffee chain restructuring (governance structure and institutional framework) (own content, structure adapted from Ponte, 2002)

	Post-‘Latte Revolution’ world (2007-present)	Impact on sustainability governance
Governance structure of the chain	Still “buyer-driven” (with roasters as strongest actors, in some cases also retailers) due to re-consolidation of roasters after period of diversification in different subsectors Growing influence of small specialty roasters that focus mainly on quality	Choice of sustainability standard adoption top-down and demand-driven Strong involvement of specialty coffee community in sustainability dialogue
Vertical integration	Continuation of traders’ integration from farms over processing to shipping and handling First examples of roasters entering in coffee production (Starbucks) Emergence of direct trade value chains with few middlemen	Traders as key actors in sustainability implementation Increasing production knowledge of roasters facilitates company-owned standards Emergence of new niche market claiming sustainability outside of codified standards
Producer–consumer country relations	Successful individual cases of cooperation through development financing, public private partnerships and private roasters’ engagement No formalized relations beyond the ICO	Influence of producing country actors, institutions and agendas on global coffee sustainability agenda variable
Institutional framework (international)	Weak: ICO maintains a purely advisory function; no quota schemes reemerge; price volatility increases; anti-trust institutions do not object to mergers However, emergence of voluntary industry platforms	Mainstream sustainability discourse moves away from minimum or focus prices toward productivity as income enhancement tool Voluntary industry platforms as new ‘global communities’ to govern sustainability?
Institutional framework (domestic)	Mixed: Most governments and quasi-government institutions remain underfunded and have limited responsibilities; yet, some reinvented themselves as strong marketing and quality control institutions and act as partners of international value chain actors	Government and quasi-governmental institutions have a limited role in sustainability governance agenda-setting; dominance by Northern/industry actors But: some attempts to redefine the dialogue, e.g. World Coffee Producers’ Forum
Quality conventions	International-level: Spread of Q-grading cupping methodology to producer level; common language also through flavor wheel education Process monitoring (certifications) grows in complexity, large focus on continuous improvement and triple bottom line Domestic-level: Combination of strong reputation control in some countries creating perceived trading barriers, while laissez-faire approach in most producing countries	Feasibility of quality-related sustainability strategies improves Perceived burden on producers through certification systems increases; local and national alternatives emerge Reputation control can increase baseline country-level prices while restricting exporting options; attempts to circumvent international sustainability regimes by coining country as ‘sustainable origin’ (e.g. Costa Rica)
Upgrading possibilities	Increasing through production of ‘microlot’ high-quality coffee and participation in ‘Cup of Excellence’ competitions; threat of market saturation similar to certified coffees	Quality-related upgrading eclipses sustainability certifications as preferred value-added strategy

4.2.1. Trend 1: the instrumentalization of third-party certification and verification

From a budgetary perspective, certification and verification still dominate the sustainability picture: around 60% (US\$190 million) of the private industry sustainability budget is spent on certification and verification premiums (Steemers, 2016). According to Panhuysen and Pierrot (2014), in 2013 around 40% of global coffee supply was certified under a Voluntary Sustainability Standard, while around 17% was sold under such a label (Pierrot, 2014). In 2015, purchases of certified coffee already accounted for 23% of worldwide coffee exports (Pierrot, 2016). We can see from Figure 8 that the main increase in coffee volume, both produced and sold, came from the 4C verification. This “Common Code for Coffee Communities” aims to be an entry-level standard that provides small producers with a stepping stone for toward other coffee certifications. Yet, in recent years this stepping stone approach has reportedly been abandoned by large roasting companies, who argue that the 4C code is sufficient for guaranteeing sustainability in the value chain (interview with coffee roaster, 14.01.2016). This puts into question the efficacy of the non-state market-driven governance system as a whole, particularly since 4C verification only has a small number of non-negotiable requirements and has been found relatively ineffective in producing on-farm sustainability improvements (Kuit et al., 2016, 2010).

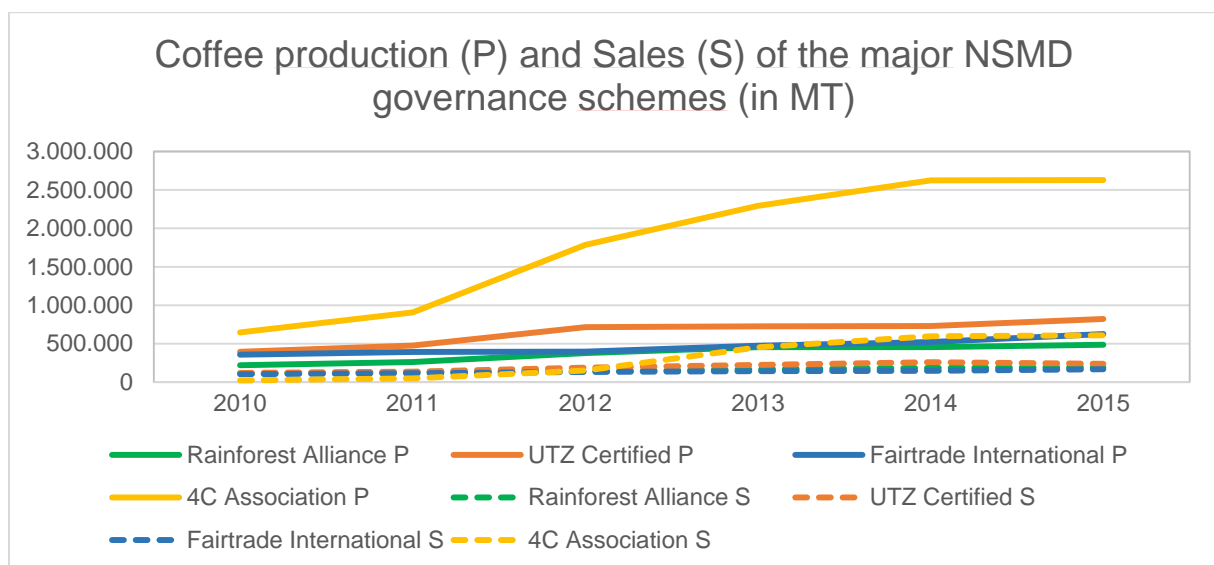


Figure 8. Coffee production and sales of major NSMD governance schemes.

There is furthermore a striking juxtaposition between this reported focus on certifications and premiums from value chain actors and a strong disenchantment with certifications in growing countries (interviews with producer organizations, 2016). Although market-oriented theories of change highlight that productivity increases and access to new markets are the main economic benefit to producers, in producing countries the main selling point for farmer participation continues to be promised price premiums. Yet, coffee growers report a steady erosion of farm-gate certification premiums paid to them by intermediaries while standard compliance becomes increasingly complex (interviews with producer organizations, 2016).

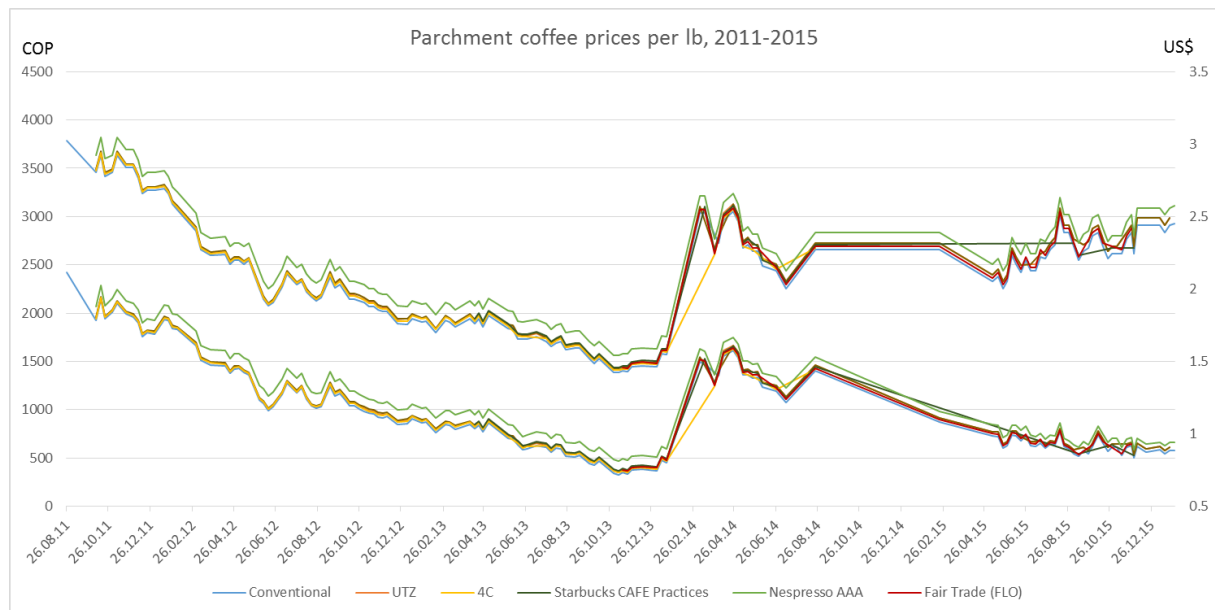


Figure 9: Parchment coffee prices of a representative cooperative in Colombia. Source: Ovando Palacio, 2016

In fact, consider in Figure 9 the example of farm-gate prices of a prominent and successful coffee cooperative in Colombia that engages in multiple certification schemes and adjusts its buying prices weekly according to global market conditions (time series on the top are in Colombian pesos, on the bottom in US dollars) (Ovando Palacio, 2016). It is clear that the price premiums of almost all certification and verification schemes are negligible when compared to the intertemporal volatility of the price and changes in the exchange rate between the US dollar, in which coffee is traded on the world market, and the local currency. This perspective shows that for farmers, selling at the right moment or being able to lock in a price through hedging instruments may have a greater effect on economic sustainability than participating in a certification scheme. A number of robust impact evaluations have similarly found little to no impact of most certification price premiums on farmers' income and livelihoods (Barham and Weber, 2012; Chiputwa et al., 2015; Jena et al., 2012).

The continued existence of certification schemes in spite of these results can be explained by its instrumentalization by the industry as a supply and risk management tool (Muradian and Pelupessy, 2005). The current demand-driven business model of certification has seamlessly incorporated the requirements of traceability and sustainability factors into an increasingly vertically integrated supply chain (Bolwig et al., 2009). While early commentators worried about the financial cost of certification acting as an entry barrier for farmers (Barrett et al., 2001), in today's market it is increasingly common for traders and large cooperatives to assume auditing and coordination costs and incorporate those expenses in the final coffee price (Grabs et al., 2016). A recent industry consultation led to the conclusion that "certification has led to a business model for sustainability based on *premiums which are commonly used to maintain existing programs*. Traders indicate that *declining premiums are insufficient to implement and maintain outreach*" (Steemers, 2016, p. 45). While this practice nominally reduces entry barriers, it leads to a doubtful cost-benefit analysis for farmers who were promised higher prices for their efforts in managing their farm in a sustainable manner (interviews with producer organizations, 2016). The main achievement of this model is to add an increasing number of coffee farmers into the self-defined 'sustainable' value chain for green coffee buyers, who value it for three reasons: ease of assurance; traceability and plausible deniability of wrong-doing; and technological scaling-up potential.

First, when examining roasters' sustainability commitments, it is apparent that firms that are relatively newer and smaller continue to rely on third-party certification and verification tools to showcase their CSR efforts. Despite the upfront costs of assurance, it may be less time- and resource-intensive than designing an entire standard or program in-company. Examples include Strauss, which works mainly with 4C, and J.M. Smucker's, which has committed to sourcing 10% of its green coffee from certified farmers from 2016 onwards, mainly using UTZ Certified (J.M. Smucker's, 2016; Strauss, 2016).

Certification and verification is furthermore still the most straightforward way for coffee companies to prove traceability and to be able to deny sourcing from plantations with blatant human rights violations, which – for instance – JDE and Nestlé were not able to deny in 2016, when the NGO Danwatch found forced labor issues on several Brazilian plantations (Hodal, 2016; Reynolds, 2009). As large corporations have more sustainability options beyond third-party certifications (Auld et al., 2008), these certifications are also starting to more openly cater toward fulfilling such specific roaster demands for information and traceability. Rainforest Alliance President Nigel Sizer emphasizes this traceability service and its strategic importance, stating that the organization wants to “ensure that the companies [they] work with are able to get more near-real-time information from satellite based information, and [...] are connected down through the supply chain to the farmers directly” (Slavin, 2016).

A further trend goes toward using certification on a regional, landscape-oriented basis. JAB executive Peter Harf explained that the group was “working on certifying entire regions rather than individual farms at [their] own charge, using satellite imagery and on-the-spot inspections” (Kiani-Kreß et al., 2016). Such an approach is also envisioned by some certification organizations, such as the Rainforest Alliance, which wants to expand its work “from 20,000 to 100,000 or 200,000 coffee farmers across a much broader landscape” in order to enhance certification effects on landscape restoration, protected areas and wildlife corridors (Slavin, 2016). Yet, such an approach will take its time. As the first JAB-owned company, Peet's Coffee & Tea aims to include its suppliers in this scheme until 2020 (Kiani-Kreß et al., 2016). This will constitute approximately 0.4% of the world coffee market out of the 21% that JAB controls.

Due to these advantages, the use of certifications is thus likely to remain an important sustainability strategy despite the industry misgivings described below. Yet, it remains to be seen whether farmers will choose to stay in certified value chains if they perceive that the effort does not provide economic returns. At that point, certification or verification may transform into a market entry requirement and possible barrier, and the positive sustainability impact may have to be newly evaluated (Auld et al., 2015; Fuchs et al., 2009).

4.2.2. Trend 2: The rise of own-company, trader-implemented schemes

As third-party certifications have expanded, so has the media's scrutiny of them, and scandals have occurred more frequently; reaching from allegations of unfair labor practices in Rainforest Alliance certified pineapple and banana plantations and tea fields to non-compliance with audit criteria in Fairtrade coffee (Deith, 2016; Oxfam, 2016; Weitzman, 2006). These and similar criticisms have dampened both consumer enthusiasm as well as companies' willingness to associate their brand with third-party labels. In 2015, for instance, in the keynote speech for a global coffee conference, OLAM

CEO Vivek Verma warned that “unfortunately as many of us here would be aware there are loopholes and malpractices in many coffee origins in the sourcing of certified coffee. I feel that each of us has to strongly guard against these. A PR disaster with any one player will hurt the entire industry and will take a long time to recover from” (Verma, 2015).

As roasting companies gain greater expertise and market share in sustainable coffees, they have frequently preferred to create company-owned standards such as Nespresso AAA and Starbucks C.A.F.E. Practices (Levy et al., 2016). Nespresso and Starbucks have been emulated by Tchibo and, most recently, McDonald’s in their quest to create company-specific sustainability sourcing guidelines and standards (Patton, 2016; Tchibo, 2014). Such standards are guided by similar sustainability principles, but allow the companies to determine the trade-off between sustainability and business efficiency themselves rather than through multi-stakeholder processes; as well, company-owned standards eliminate the business risk of exposure to a third-party standard scandal (Alvarez et al., 2010). Furthermore, they are useful tools to exercise supply chain control (Dauvergne and Lister, 2012; Fuchs et al., 2009) and implement quality management (Auld et al., 2015). As Figure 9 shows, quality-based schemes such as Nespresso AAA tend to pay higher price premiums than third-party standards; however, they are typically limited to farmers in certain geographical areas, and have extremely stringent quality guidelines so that farmers generally can only sell small parts of their harvest into the scheme (Alvarez et al., 2010). Since firm-owned standards are only accepted by one company, participating farmers are furthermore increasingly dependent on roasters’ sourcing decisions. For instance, during the global economic downturn in 2008, Starbucks significantly decreased the volumes of C.A.F.E. Practices-verified coffee purchased in several high-quality countries such as Guatemala, turning to countries with cheaper baseline prices instead. Farmers that had undergone the verification process were thus left without a buyer for C.A.F.E. Practices-verified coffee and many of them were extremely hesitant to re-enter the system once Starbucks started to purchase again from these regions (interview with coffee trader, 24.11.2015).

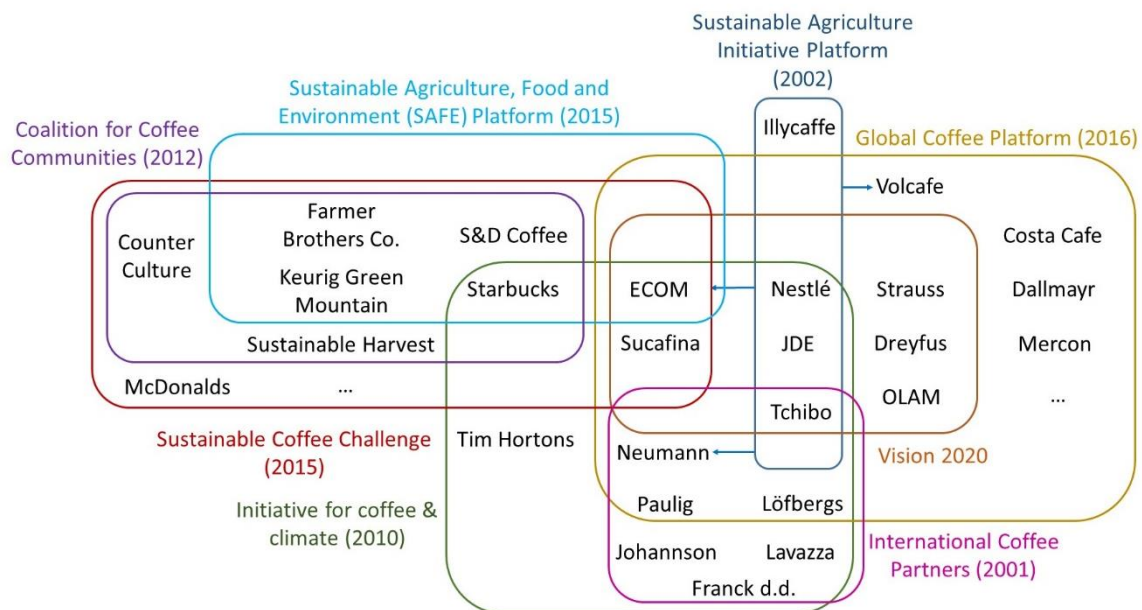
Traders have a vital role to play in the implementation of sustainability in the coffee value chain (Rosenberg et al., 2009). Frequently, they are the key implementers of roasters’ company-driven sustainability programs; for instance, Volcafe and ECOM are responsible for the training, service provision and quality assurance of Nespresso AAA coffee according to Nestlé’s guidelines (Nespresso, 2016). They are also recognized as high-impact sustainability actors in their own right, as demonstrated by the fact that the International Finance Corporation has invested US\$154 million in ECOM between 2006 and 2012 in order to fund the training of almost 54,000 coffee farmers in 12 countries (IFC, 2012b). This reality leads the IDH to categorize traders as “hidden agents of change” whose impact has only infrequently been recognized or critically assessed (Rosenberg et al., 2009).

4.2.3. Trend 3: The emergence of sectoral sustainability platforms

Another observable result has been a renewed interest in creating sector-wide platforms and alignment initiatives surrounding sustainability. Indeed, in 2015/16, two such efforts have emerged almost simultaneously: The Sustainability Coffee Challenge (SCC; financed by Starbucks and implemented by Conservation International) and the Global Coffee Platform (GCP; rising out of the dissolution of the 4C Association and its combination with the Dutch IDH Sustainable Trade Initiative’s Sustainable Coffee Program, and driven forward mainly by Nestlé and JDE). They join a

number of pre-existing platforms that formed to coordinate and encourage pre-competitive activities, as shown in Figure 10 (Coffee & Climate, 2016; Conservation International, 2016a; FOMIN, 2015; GCP, 2016a; ICP, 2016; SAI Platform, 2016). This visualization of respective memberships (not comprehensive; only largest traders, roasters and retailers are shown) shows a complex network that industry members are part of; indeed, industry sources speak of a large perceived overlap and of “seeing the same people in different settings” (Steemers, 2016, p. 42).

Figure 10: Overlap between sustainability platforms in the coffee sector. Source: Own illustration.



The effective contribution of these platforms to sector sustainability remains to be assessed. It can be argued that information-sharing, coordination and alignment efforts are always helpful to avoid the duplication of efforts and harness the industry’s full potential (Leiderer, 2015). Furthermore, a commendable effort has been made to include coffee producing countries’ institutions in both SCC and GCP, and the discourse on sustainability and needed changes is held at a sophisticated level, showing great industry awareness.

However, it is yet unclear how open competitors are to share detailed information and collaborate on farm-level initiatives; though these platforms are nominally ‘pre-competitive’ in spirit, increased upstream integration has actually made sourcing practices and farmer relations (particularly in regions of high-quality coffee supply) highly competitive. Indeed, in 2008 ECOM, Neumann Kaffee Gruppe and Volcafe decided to leave the Sustainable Agriculture Initiative Platform due to such concerns over on-the-ground competitiveness (SAI Platform, 2008; Wegner, 2012).

4.2.4. Trend 4: An industry-led re-definition of sustainability (projects)

The recent changes in the industry point toward a loosening of the definition of and budget for ‘sustainability’ beyond sustainability standards. There is a growing awareness that the threat of climate change, generational changes, labor shortages and economic hardships in the coffee lands bears the risk of supply shortages in the future while demand is slated to steadily increase. Thus,

sustainability in coffee production – redefined by industry as high productivity, resilience to climate change and disease outbreaks, and quality assurance – has become a supply management strategy in which industry actors seek to ensure the continued availability of adequate green coffee for their purposes (Verma, 2015). Industry actors increasingly question whether third-party certifications are adequate and cost-effective avenues to reach those goals.

In the most marked shift away from forward-looking sector support for third-party certifications and verifications, in 2016 the Global Coffee Platform's 'Vision 2020' highlights that although "with the focus on voluntary certification and verification standards and programs, the sector took an important step towards sustainability, [...] these steps are not enough on their own to address the more overarching and systemic sustainability challenges the sector is facing" (GCP, 2016b). According to the GCP, "the time has come for the coffee sector to continue its pioneering and leading role, and take a more collaborative, holistic and aligned approach to sustainability, aligning the different programs and initiatives towards a unified vision and progress framework" (GCP, 2016b). Equally, the Sustainable Coffee Challenge turns its focus away from certification and verification standards, instead working "to better understand the non-certification commitments that are being made by the sector and how these contribute to the transformation of the coffee sector" (Conservation International, 2016b).

These non-certification commitments typically consist of on-the-ground projects that aim to increase productivity, teach climate change adaptation practices or elevate the produced quality. Around US\$70 million per annum are invested in such projects and activities that also include agricultural extension services, access to finance and risk management, value addition at origin, and logistics services (Steemers, 2016). These types of programs are generally executed by consulting entities (which may be for or not-for-profit) such as Technoserve, Root Capital or the Hanns R. Neumann foundation, and frequently benefit from an average of 30-50% of matchfunding from public sources (Steemers, 2016).

Certification organizations are also reading the market signals and repositioning their expertise and networks as ideal preconditions to become partners for rural development projects, consultants in sector transformation, and stakeholders in broader public-private partnerships. For instance, FLO collaborates with Nespresso on the establishment of farmer pension plans in Colombia (Nogueira, 2016); and the Rainforest Alliance is rolling out Nestlé's 'Nescafe Better Farming Practices' project to 12,000 farmers in Sumatra (Millard, 2016), as well as assisting Caffé Nero's sustainable farming training program in Latin America (Mace, 2016).

5. Discussion and new research agenda

The results presented above show that the reorganization of the supply chain and the emergence of new trends in the coffee sector, as described in Section 4.1., are affecting non-state market-driven sustainability governance in several main ways.

Where sustainability standards continue to be used at scale for traceability purposes, low-cost entry-level standards such as 4C are preferred, which however have shown very limited effectiveness in improving field-level practices and livelihoods so far (Kuit et al., 2016, 2010). The mismatch between supply and demand has furthermore eroded price premiums for certified coffee and made it more

difficult for many certified producers to sell their entire coffee crop with a label, thus negating the promised price and market access benefits (own interviews with producers' organizations, 2015-2017). Referring back to Auld et al. (2009)'s five categories, in recent years the situation in the coffee sector has therefore most resembled category 3, a weakly institutionalized NSMD system where "NSMD certification gains widespread support, but [is] unable or unwilling to address the enduring social and environmental problems for which it was originally created" (Auld et al., 2009, p. 190).

Furthermore, the emergence of specialty coffee and direct trade has become a powerful alternative to sustainability certifications for farmers and roasters alike. This movement is governed through relational supply chains and has no codified sustainability criteria apart from a promise of higher prices through greater quality; yet, due to the economic incentives it offers to coffee farmers, in the field it is seen as the best opportunity for farmers to escape market prices and poverty (interviews with producers' organizations, 2015-2017). It is however still unclear whether, and which, environmental benefits specialty quality coffee production can co-produce. Specialty coffee associations such as the SCA have also emerged as powerful gathering places for motivated smaller roasters to coordinate and engage in sustainability initiatives, mainly direct impact projects.

These direct-impact projects are also popular with JDE, Tchibo, and Keurig Green Mountain (JDE, 2016; Peyser, 2016; Tchibo, 2014), and in combination with company-owned standards and the rise of global platforms mark a general shift away from the NGO-dominated, strictly codified definition of sustainability implemented and monitored through non-state market-driven mechanisms, toward a more flexible definition that includes companies' own interpretations and priority projects. The Sustainable Coffee Challenge, for instance, has the goal to "bring industry partners together in grand conversation on what sustainability means to each of them" (interview with NGO, 18.04.2016).

On the other hand, the economic rationale of non-state market-driven sustainability governance is also being increasingly criticized by producing country actors, who claim that "standards have focused intensively on environmental sustainability, but left economic sustainability issues behind" (Velez, 2015). The World Coffee Producers' Forum thus emerged as a counterbalancing global arena to discuss sustainability issues relevant to producers – mainly the price issue, but also productivity and climate change adaptation – with only junior participation by standard-setting organizations.

It therefore seems that with the rise of the Global Coffee Platform, the World Coffee Producers' Forum, and related initiatives, we are in a moment of flux where first loosely defined global communities focused on sustainability governance in the coffee sector are beginning to emerge. However, these communities do not "grant [the] NSMD system the authority to govern" (Bernstein and Cashore, 2007); rather, they endeavor to reclaim the definitional space and implement initiatives that align with their own rational motives (continued access to good coffee through productivity and quality enhancement for the roasters; higher and stable prices for the growers). These actions seem to align more with a 'logic of consequences' than with a 'logic of appropriateness', showcasing that at least in the coffee sector, Bernstein and Cashore's third phase of non-state market-driven governance has (not) yet materialized.

Under these conditions, the effectiveness of sector alignment on sustainability, and its impact on non-state market-driven governance mechanisms, is one of several novel research foci that arise from this analysis. A comparative impact evaluation of company-driven and third-party standard systems is another interesting future research area, in particular as a growing number of roasters and

retailers are constructing such systems. Furthermore, if direct-impact projects will increasingly complement and possibly even substitute certification and verification efforts, it is imperative that their impact is better measured. Indeed, even industry representatives consider impact evaluation one of their main challenges (Steemers, 2016). This includes pushing for robust baseline and follow-up studies, as well as establishing credible collaboration opportunities between independent academics and companies. Academic input should also be provided in the development of common output and impact indicators, such as currently undertaken by the Sustainable Coffee Challenge and the Global Coffee Platform, to ensure an appropriate balance of societal and industry interests.

Regarding global value chain research, particularly in the coffee sector, it could be of interest to further explore what role financial actors, specifically private equity investors and speculators, have in influencing strategic management and pricing decisions of value chain actors, and whether they should be included as value chain actors in an updated schematization. Relatedly, an underexplored research area consists of the recent tendency to take companies from stock market-listed to private ownership, its motivations (such as, potentially, increased reporting and compliance regulation) and its impacts on strategic decision-making. Finally, in these periods of market upheaval and increased attention to sustainability and Corporate Social Responsibility, it remains to be explored what the impacts of mergers, acquisitions and management changes are on long-term sustainability projects in producing countries whose theories of change include consistent, multi-year financing and sourcing commitments.

6. Conclusion

When comparing the organization of the coffee supply chain to Ponte's (2002) analysis 15 years ago, at a first glance not much has changed: the roaster and trader level is still concentrated to almost the same extent, there is still no binding global governance framework for coffee markets, and coffee producers continue to face difficult livelihood challenges.

Yet, these observations hide important developments that have occurred in the sector. First, after a tumultuous period of reorganization, only two of the largest roasters remain the same, whereas many new players have taken over the reins of the coffee industry. After a period of power struggle between traders, roasters and retailers, recent consolidation efforts at the roaster level seem to have strengthened their comparative negotiating power. Furthermore, the financialization of the sector is at an all-time high, with speculators, hedge funds and traders exploiting inter-temporal and cross-market arbitrage opportunities due to high price volatility and supply uncertainties. Traders have expanded their foray into upstream integration and supply management, investing considerable resources in infrastructure and extension personnel to guarantee supply for their buyers, including certified coffee supply. However, the period has also seen a relative emancipation of coffee-producing countries, their institutions and producers, who are increasingly taking own action to expand into high-return markets and differentiate their products. Direct Trade efforts may have played a central role in expanding producers' knowledge about quality and consumer choices and increased the sophistication of producer cooperatives in reaching new buyers. Yet, the industry is still pyramid-shaped, with high-value, high-effort quality coffee representing a low percentage of total production, while the greatest share of mainstream-quality coffee is sold at fluctuating world market prices and produced in an increasingly concentrated number of low-cost, high-productivity countries.

The governance of sustainability in the sector has simultaneously seen important changes in the past decade. Non-state market-driven governance through third-party certifications has first shown impressive growth and reached the coffee sector's mainstream, in the process imparting much knowledge on sustainability issues to large market actors. This knowledge diffusion, combined with recent concerns about supply shortages due to climate change and farmer unprofitability, has led to an increased reconceptualization of sustainability as supply chain risk mitigation as well as a greater appropriation of the issue by roasters. Recent discontent with third-party certifications has given rise to more company-owned standards, a focus on direct-impact projects in producing countries, and the alignment of such efforts through sectoral platforms such as the Global Coffee Platform and the Sustainable Coffee Challenge. The relationship between civil society and major industry players consists mainly of collaboration, rather than confrontation as in the early 2000s; and the mainstream industry refrain – that farmer income increases should stem from productivity or quality improvements rather than from minimum prices significantly higher than stock market prices – is more infrequently being challenged by civil society organizations in consuming countries.

This shift to buyer-driven sustainability governance, in parallel with a buyer-driven global value chain, brings many opportunities, but also some challenges for substantially enhancing the sector's sustainability. As company-owned standards and projects become the norm, civil society organizations and producer representatives should guard against large-scale blanket efforts that do not significantly engage with producers. Furthermore, as sustainability efforts are aligned with supply chain concerns and focused on high-quality regions, it is important to ensure that mainstream producers who suffer most from price volatility are not excluded from such projects. This task could fall to the new sectoral platforms if they become powerful enough actors to sway companies to disclose potentially strategic information and to convince them to amend their strategies according to equity considerations. It will remain vital for sustainability research to critically follow these developments.

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Appendix 1: Overview of national regulation of the coffee sector. Source: Lora (2013)

Government/regulatory institution involvement in coffee sector governance	Brazil	Cameroon	Ivory Coast	Costa Rica	Honduras	India	Indonesia	Mexico	Nicaragua	Papua New Guinea	Vietnam	Colombia
Market regulation	No	No	Yes	No	No	No	No	No	No	No	No	No
Minimum prices	(Yes) ⁴	No	Yes	Yes	No	No	No	No	No	No	No	Yes
Export tax	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	Yes
Other taxes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No
Credit provision	Yes	No	N.A.	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Input provision	No	No	Yes	No	Yes	No	N.A.	No	No	Yes	No	No
Extension services	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Research and development	Yes	Yes	N.A.	Yes	Yes	Yes	Yes	N.A.	No	N.A.	Yes	Yes
Basic off-farm processing	No	N.A.	No	No	Yes	No	Yes	No	No	No	No	No
Quality control	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	No	Yes
Inventory management	Yes	No	Yes	No	Yes	No	N.A.	No	No	No	No	Yes
Stabilization fund management	Yes	No	Yes	Yes	No	No	No	Yes	No	No	No	No
Export quality control	No	Yes	Yes	Yes	Yes	No	Yes	N.A.	No	Yes	No	Yes
Certification of specialty coffee	Yes	No	Yes	No	No	No	Yes	N.A.	No	Yes	Yes	Yes
International marketing	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Domestic marketing	No	Yes	No	No	No	No	No	No	No	No	No	Yes
Export license provision	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Quota and export contract provision	No	No	Yes	Yes	No	No	No	No	No	No	No	No
Contract ledger maintenance	Yes	Yes	Yes	Yes	Yes	N.A.	N.A.	N.A.	N.A.	Yes	Yes	Yes
Total	10	9	15	12	12	5	9	6	1	10	7	13

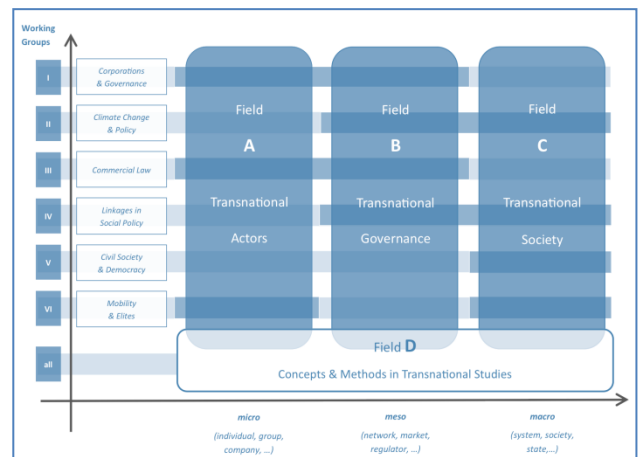
⁴ Non-binding reference price

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