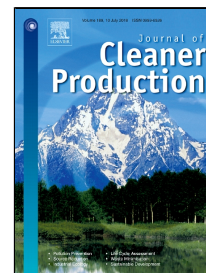# Accepted Manuscript

Challenges for Sustainable Supply Chain Management: When Stakeholder Collaboration Becomes Conducive to Corruption

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Challenges for Sustainable Supply Chain Management:

When Stakeholder Collaboration Becomes Conducive to Corruption

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Challenges for Sustainable Supply Chain Management: When Stakeholder Collaboration Becomes Conducive to Corruption

Abstract

Corruption in supply chains is an important but poorly understood phenomenon that prevents supply chains from achieving their desired sustainability performance. Drawing from the literatures on sustainable supply chain management, and corruption, this paper explores the antecedents, dynamics, and consequences of corruption in the Brazilian beef supply chain. Supply chains in emerging economies face a significant risk from both "petty" and "grand" corruption, and this makes criminal activity more difficult to disrupt. This research makes four contributions to theory, policy, and practice: (1) it fills an important gap in the literature by explicitly connecting the sustainable supply chain management perspective to the corruption discourse; (2) it advances the sustainable supply chain management literature by suggesting that stakeholder collaboration might not be always a "good thing" because in some cases it may increase the risk of corruption; (3) it suggests that corruption might be embedded in certain types of supply chain relationships which form a "corruption triangle"; (4) it identifies implications for the practice of supply chain management and provides insights for policy makers and regulators/law enforcers on how to identify and disrupt supply chain corruption scams.

Keywords:
Sustainable supply chain management; stakeholder collaboration; cooperative advantage; corruption triangle; turbulent environments; emerging economies

1 Introduction

The intensification of international competition, media scrutiny, and consumer awareness has forced firms to pay more attention to their sustainability performance (Hopkins et al., 2009). In order to achieve true sustainability performance, companies increasingly rely on their network of suppliers to comply with broad sustainability requirements (Gold and Schleper, 2017; Dyck and Silvestre, 2018a) such as the Triple Bottom Line (TBL) of economic, environmental, and social sustainability (Elkington, 1997) to meet the stricter demands from consumers, governments, and society. Supply chain members are required to work together to proactively address sustainability concerns and meet (or perhaps exceed) expected standards.

Pagell and Wu (2009) consider a sustainable supply chain one that performs well on all TBL elements. The literature stresses that there are two critical factors that influence the implementation of sustainability in supply chains and its outcomes. The first critical factor is the managerial orientation toward sustainability, which is referred to as how managers and decision-makers view sustainability and is related to the motivations they possess to implement sustainability initiatives. According to Dyck and Silvestre (2018a), a managerial orientation toward sustainability can take two forms: traditional business approaches (where firms adopt sustainability simply to capture additional financial value for shareholders) or more progressive business approaches (where firms implement sustainability to create socio-ecological value for all stakeholders). In the first approach, the ultimate goal is to maximize financial benefits (i.e., enhanced profits, reduced costs, larger market share, etc.) through

sustainability initiatives, while the second approach is based on ethical behavior and organizational values (i.e., "it is the right thing to do") (Morais and Silvestre, 2017).

The second critical factor is the nature of the institutional context within which supply chains operate (Silvestre, 2015a). For example, a supply chain operating in developed economies in North America or Europe will face different challenges than a supply chain operating in emerging economies in Asia or Latin America. This context heterogeneity is one of the reasons why the management of supply chains has become overly complex, hindering our understanding of the antecedents and dynamics in sustainable supply chain (Pullman et al., 2009; Yawar and Seuring, 2015). The literature suggests that the high level of complexity in institutional contexts leads to highly turbulent business environments (Smart and Vertinsky, 1984; Leonard-Barton, 1992) where institutional voids, lack of (or ineffective) law enforcement mechanisms, and opportunistic behaviours (very often encountered in emerging/developing economies) make it more difficult for firms and supply chains to learn, innovate, and improve sustainability performance (Silvestre, 2015a).

An important (but mostly neglected) supply chain phenomenon that emerges from these highly turbulent environments is corruption (Silvestre, 2015a), which tends to be systemically embedded at all levels of society, especially when coupled with business approaches that aim to maximize financial gains. It is estimated that corruption scams account for annual losses of US$1.5 to US$2 trillion, i.e., 2% of the world's GDP (IMF, 2016), and supply chains are impacted by this corruption (Arnold et al., 2012). The limited research that is available suggests that supply chain corruption is a major risk to supply chain sustainability and must be better understood (Speier et al., 2011; Arnold et al., 2012).

This paper aims to address this gap in the literature by exploring a corruption scandal in the Brazilian beef supply chain, where the JBS Company (the world's largest processor of beef, chicken, pork, and their by-products) played a central role. The judicial leniency agreement of the JBS executives with the Brazilian prosecutors revealed the involvement of key players of the Brazilian beef supply chain that made legitimate political donations with the intention of getting closer to key politicians who they thought would be elected. After the supported politicians were elected, supply chain players and politicians negotiated the "deals" to streamline certain processes of interest to the supply chain. At that point, most of the relationships between these groups became personal. Although trust is not commonly present, bargaining agreements were established in order to generate self-gains. The classified information about the scam at the Justice Department was leaked to press and mass media unfolding an intricate criminal network of corruption. This dataset is the basis for the empirical work presented here.

More specifically, in this paper, we explore the antecedents, dynamics, and consequences of corruption in supply chains. We draw from two literatures—sustainable supply chain management, and corruption—to analyze a real corruption scandal in the export-oriented Brazilian beef supply chain. We focus on the following research questions: *how does corruption occur, and how does it prevent supply chains from achieving a desirable level of sustainability?* Findings indicate that supply chains face a significant risk from corruption, especially in emerging economies, where the strong connections between petty and grand corruption makes the associated criminal networks more difficult to disrupt. This research fills an important gap in the literature and contributes to it by connecting the sustainable supply chain management perspective to the corruption discourse. It also advances the sustainable supply chain management literature by suggesting that stakeholder collaboration might not always lead to "cooperative advantage" as suggested in the mainstream stakeholder literature (Strand and Freeman, 2015). This paper also suggests that corruption might be embedded in

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certain types of relationships that reinforce what we call the "corruption triangle". These contributions have important implications for the practice of supply chain management and policy.

The paper is organized as follows: in Section 2, we survey the relevant literature in the sustainable supply chain management, corruption, and stakeholder management discourses. In Section 3 we describe our methodology, data collection, and data analysis. Section 4 presents a case study of a corruption scandal in the beef supply chain in Brazil. Section 5 discusses the implication of this research for theory, practice, and policy, and Section 6 identifies the specific contributions of this research along with suggestions for future research.

2 Theoretical Framework

2.1 Corruption: A Neglected Barrier to Sustainable Supply Chains

Corruption is commonly defined as the "abuse of public power for private benefit" (Rodriguez et al., 2005, p. 383), but it goes beyond public officials and often affects businesses and supply chains as well (Dixit, 2015; Cuervo-Cazurra, 2016). Corruption has many connotations and interpretations, varying according to time and place (Rose-Ackerman and Palifka, 2016). The common dimensions of corruption involve exchange, violation of norms, abuse of power, indirect victims and secrecy (Rabl and Kühlmann, 2008). In some situations, to bypass an obligation, individuals obtain advantage over others by exchanging favors. Corruption also occurs due to weak institutions and opportunistic behavior from trusted players who has a lot of power misuses that power to achieve private gains (Nichols, 2017).

Corruption can be either "grand" (i.e. political) or "petty" (bureaucratic), depending on the amount of power, money, trust, and self-gain involved in the scam (Argandoña, 2017; Aßländer, 2017; Rose-Ackerman & Palifka, 2016). Grand corruption results when people with a great deal of power demand large amounts of money/benefit in exchange for their actions or approval (Nichols, 2017). Grand corruption (also known as political corruption) involves big "favors" from high level government officials who distort government policies to obtain benefits for themselves at the expense of the public good (Nichols, 2017).

By contrast, petty corruption (also known as bureaucratic corruption) is the small-scale abuse or misuse of power or trust for private benefit (Tanzi, 1998). Petty corruption is perpetrated by individuals in everyday situations to obtain personal advantages by, for instance, overlooking certain questionable activities, or by slowing down (or speeding up) approval processes. It occurs when public officials use their power to obtain private gains when they are interacting with ordinary citizens and organizations who need access to public goods or services. Compared to grand corruption, petty corruption has a relatively modest monetary impact, but it can be as harmful for the society as grand corruption.

Corruption can negatively affect all the three dimensions of sustainability (economic, social, and environmental). Corruption also creates damaging consequences for individuals, organizations, governments, and society. Corruption also exacerbates public and private sector inefficiency, and those who are benefiting from this inefficiency have no incentive to streamline it (Dimant and Tosato, 2017). The likelihood of corruption increases because of the high levels of complexity due to globalization, the large numbers of people and stakeholders involved, variation in cultural backgrounds, and varying ethical standards (Arnold et al., 2012). In practice supply chains are exposed to corruption risks and, although some supply chain players have sophisticated supply chain management mechanisms, in most of the cases these efforts are poorly coordinated (UN Global Compact, 2010).

In the supply chain management discourse, research on corruption is still scarce and scattered. For example, in one of the few papers on the issue, a survey on corruption in supply chain management applied to German SMEs resulted in the definition of corruption as the abuse of a function for its own benefit or for benefit of others (Arnold et al., 2012). The authors use agency theory and the inducements-contributions theory to demonstrate that there is an inclination toward corruption in companies and supply chain management (Arnold et al., 2012). As an important social phenomenon, corruption is perceived as a key element that hinders sustainable supply chains (Silvestre, 2015a).

In the sustainable supply chain literature, the term "sustainability" focuses on the Triple Bottom Line (TBL) dimensions of economic, environmental, and social (Elkington, 1997; Seuring and Müller, 2008; Linton et al., 2007). Although research on the key drivers and dynamics of sustainable supply chain management has been growing significantly (Walker et al., 2008; Holt and Ghobadian, 2009; Intravaia and Viana, 2016), practice is still lagging behind the actual implementation of these drivers. Silvestre (2016) argues that the motivation to implement sustainability in practice is driven by two key factors: opportunities and risks. On the one hand, supply chains adopt sustainable practices because they identify business opportunities in the marketplace (Ballou et al., 2000; Hall et al., 2012; Ross, 2013). On another hand, supply chains adopt sustainable practices to mitigate or avoid the risks they may face if they decide not to act (Matos and Hall, 2007; Mendes et al., 2014; Silvestre, 2015b).

Risks, such as corruption, that are not managed well can lead to disruption, failure and other supply chain problems (Christopher and Lee, 2004). Supply chain sustainability risk is related to events that can lead to negative social and/or environmental impacts on a supply chain (Blome and Schoenherr, 2011; Hofmann, et al., 2014). Therefore, risk management seems to allow environmental and social problems to be identified and controlled before they are exposed publicly (Jüttner et al., 2003; Seuring and Müller, 2008; Teuscher et al., 2006). The supply chain sustainability risk management literature has received increased attention as of late, but studies exploring corruption within supply chains are still scarce (Silvestre, 2015a). Corruption is a key risk for supply chain sustainability (Speier et al., 2011; Arnold et al., 2012) because supply chains often operate across distant, heterogeneous, highly turbulent, and sometimes ambiguous business environments. This makes corruption risks difficult to identify, understand, and mitigate. Corruption in supply chains may be almost as impactful as financial crises since it reflects both economic and social phenomena (Giannakis and Papadopoulos, 2016).

2.2 Tackling Corruption in Supply Chains?

Research studies have often used stakeholder theory (Freeman, 1984) when suggesting ways to manage and mitigate supply chain sustainability risks, including corruption risks. Listening to, and engaging with, multiple stakeholder groups allows supply chains to manage risks and improve sustainability performance (Alvarez et al., 2010). Supply chain stakeholder groups (Atkinson et al., 1997) may have conflicting interests (Matos and Silvestre, 2013), so engaging with them can be challenging. However, research indicates that it is worth the effort because companies and supply chains can actually legitimate their respective interests by fairly dealing with them (Donaldson and Preston, 1995) and collaborating with others (Husted and Sousa-Filho, 2017) to improve their sustainability performance.

Strand and Freeman (2015) introduced the concept of cooperative advantage based on multi-stakeholder initiatives. The authors suggest that the now-dominant "competition" approach should be replaced with a new "cooperative" approach where a firm cooperates with its stakeholders to create superior value for the company and its stakeholders. Cooperative

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advantage is consistent with stakeholder theory and associated approaches (e.g., Davis et al., 1997; Dyer and Singh, 1998; Dyck and Silvestre, 2018a). The ongoing debate in the literature about how to manage stakeholders for enhanced sustainability is exciting. For example, Vildåsen and Havenvid (2018) argue that firm-stakeholder relationships play a crucial role in enabling sustainability. In the same way, Schneider and Buser (2018) make the case that stakeholder interactions are viewed as an important element for sustainable development. Nawaz and Koç (2018) propose a systematic framework to manage sustainability systems that include extensive involvement of stakeholders, enhanced transparency, adaptiveness, and performance measurement. Horisch et al. (2014) identified three challenges for managing stakeholder relationships for sustainability: (a) strengthening the sustainability interest for that particular stakeholder group, (b) creating mutual sustainability interests, and (c) empowering stakeholders to act as intermediaries for the sustainability causes. To address these challenges, the authors argue that three related mechanisms exist: education, regulation, and sustainability-based value creation for stakeholders.

In practice, supply chains have been often attempting to address these three challenges by operationalizing multi-stakeholder initiatives (MSIs). In an era of highly publicized scandals and rising public concern about global environmental degradation and poor labor conditions in supply chains (Gold et al., 2015), MSIs have gained popularity as potential mechanisms to address complex environmental and societal problems (Fowler and Biekart, 2017), including the development of regulatory standards and procedures on ethical trade (Huges, 2001), global deforestation (Moog et al., 2015), human rights (Baumann-Pauly et al., 2016), and sustainable development goals (Fowler and Biekart, 2017). MSIs aim to bring together a range of stakeholder groups, including those from industry, NGOs, labor unions, trade associations, ethnic or community organizations, academics, and government to create governance solutions for social and environmental problems (Moog et al., 2015). These initiatives aim to engender business responsibility through collective programmes of learning and joint action (Hughes, 2001). Thus, in theory, the legitimate criteria and reasoning behind the establishment of MSIs include engagement as a means of achieving legitimacy and transparency between stakeholder groups (Mena and Palazzo, 2012) in search for cooperative advantages (Strand and Freeman, 2015).

However, although MSIs are recognized in the literature as an effective way to propose solutions to existing environmental and social concerns, in practice these initiatives face multiple criticisms. According to Moog et al., (2015), critics point to the issue of power relations in these governance structures, which often serve the interests of dominant firms/players at the expense of other smaller stakeholder groups. Critics argue that MSIs do not represent a broadening of the social and environmental role of the companies involved, nor do they represent the opening of new deliberative political arenas, but instead they are essentially de-politicization mechanisms that limit and suppress political expression and debate (Moog et al., 2015). In line with this skeptical perspective, this paper advances the debate and provides an insightful counter-argument to the mainstream stakeholder management literature by questioning the normative assumption that collaboration between stakeholders and firms is always something that leads to "cooperative advantage" (Strand and Freeman, 2015).

Our theoretical framework (Figure 1) proposes that the resultant supply chain sustainability performance is influenced by two key aspects: managerial orientation toward sustainability and the level of turbulence encountered in the environment. The managerial orientation toward sustainability may be associated with a traditional business approach, where the focus is on maximizing financial value capture (Dyck and Silvestre, 2018a). In this approach, supply chain firms implement sustainability simply to capture additional financial

rewards (Morais and Silvestre, 2017); unfortunately, stakeholder collaboration mechanisms (such as MSIs) may lead to opportunistic behaviours that lead to corruption. Alternatively, a managerial orientation toward sustainability can be associated with a more progressive approach to sustainability, where the focus is on ethical considerations, values, and socio-ecological well-being (Dyck and Silvestre, 2018a). In this approach, supply chain firms implement sustainability because it is the right thing to do (Morais and Silvestre, 2017), and stakeholder collaboration is more likely to generate cooperative advantages (Strand and Freeman, 2015) and improved long-term supply chain sustainability performance.
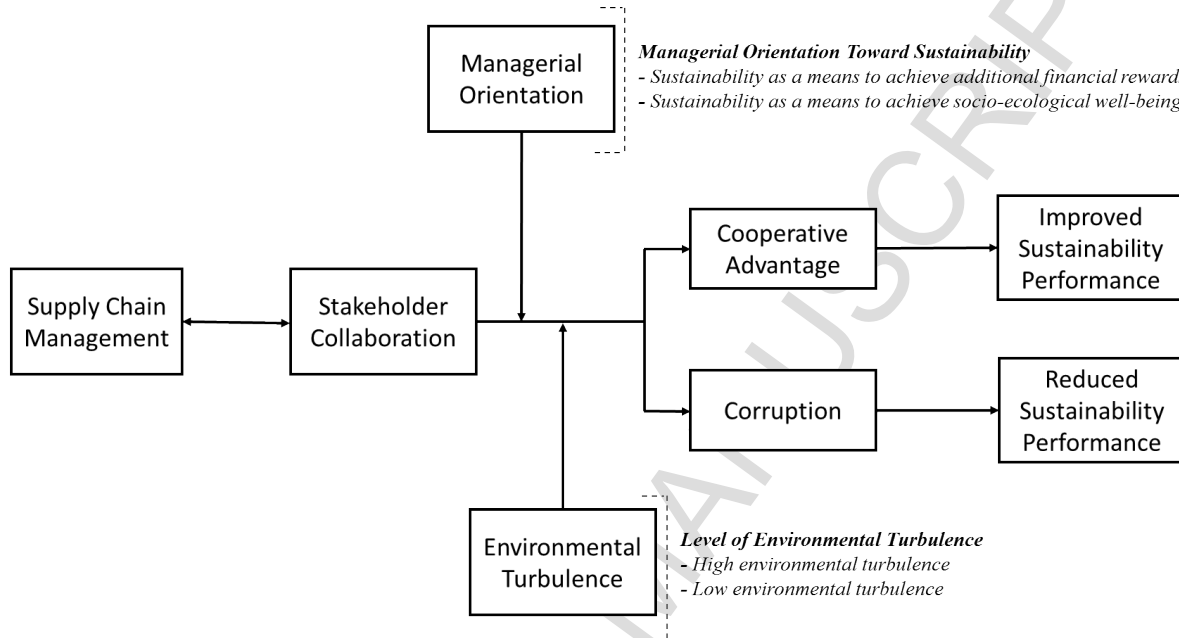

Figure 1: Theoretical Framework

The second key aspect is the level of environmental turbulence (Figure 1), which can influence how firms learn and innovate (Smart and Vertinsky, 1984; Leonard-Barton, 1992). In high turbulence environments, where institutional voids and the lack of (or ineffective) law enforcement mechanisms exist, opportunistic behaviour tends to emerge and stakeholder collaboration can increase the likelihood of corruption (Silvestre, 2015a) and reduce supply chain sustainability performance. On the other hand, in contexts with low environmental turbulence, where institutions are established and strong, even if players adopt traditional business approaches (i.e., maximization of financial dimension), corruption is likely to happen less frequently and will be less widespread (i.e., as isolated cases, not systemically embedded in the social structures). Therefore, we suggest that stakeholder collaboration in contexts where a traditional managerial orientation toward sustainability coupled with highly turbulent business environment can lead to negative results, such as corruption.

3 Method

This paper explores the allegations of political and bureaucratic corruption in the supply chain of JBS (the initials of founder Jose Batista Sobrinho), the world's largest processor of beef, chicken, pork, and their by-products. Its focus on international expansion started in 2005, and in 2014, its subsidiary held a 22% market-share in beef processing and an 18% market-share in poultry processing in the U.S. market (Runyon, 2017). JBS ranks 895th in the Global 2000 Forbes List, and as of May 2017, had a market capitalization of US$8.2 billion (Forbes,

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2017). The company's net revenue for the third quarter of 2017 (ended September 30, 2017) was US$1.6 billion compared to US$2.0 billion reported in the same quarter for 2016 (Bloomberg, 2017).

The company was selected for analysis because of its size and importance, as well as the magnitude of the corruption scandal, which has no precedent in the world. In 2017, three cases of corruption involving JBS, explored through access to investigations conducted by the Brazilian Federal Police (PF), the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA) and the Office of the Prosecutor General (PGR), were disclosed. The leniency agreements of the directors of JBS with the PGR revealed an extensive criminal network within the beef supply chain with business representatives, politicians and members of the Brazilian government. The "Carne Fraca" operation, carried out by the PF, identified the participation of inspectors from the Ministry of Agriculture, Livestock and Supplies (MAPA) in the practice of extortion for the release of permits for meat and poultry processing companies. The "Carne Fria" operation, carried out by IBAMA, identified companies supplying cattle raised in forbidden areas in the Amazon forest. The meat processing business is interesting because of the issues of public health associated with food products, and the issues of cattle farming and the environmental concerns about it in Brazil.

Secondary sources are the basis for the empirical work. Secondary data sets offer advantages in terms of cost and effort, but also in terms of studies on business ethics (Cowton, 1998). The use of a secondary dataset to research illegal corporate behavior is driven by the reality that it is difficult to collect primary data on corruption because socially undesirable behaviors are "sensitive, embarrassing, threatening, stigmatizing, or incriminating" (Baucus and Near, 1991; Dalton and Metzger, 1992, p. 207).

The dataset used in this research includes extensive material (reports, news, audio and video recordings) associated with comprehensive investigations held by the Federal Police of Brazil, which is an official Government body that is also part of the national legal system. This fact makes the dataset reliable, and its content is of special interest for business ethics/corruption researchers and practitioners.

The dataset was developed by the Federal Police, the Office of the Prosecutor General, the Supreme Federal Court, and the 14th Branch of the Federal Justice of Brazil. The investigation consists of 7 comprehensive written reports totalling 905 pages. It also contains 120 minutes of audios (including phone conversations between people involved in the scandal that were intercepted by the Federal Police), and 960 minutes of video recordings, including the testimonies of witnesses and defendants (see Appendix 2 for more details about the dataset). The researchers examined all this material to capture key aspects of the scams and held several discussions about them. The researchers complemented the dataset with extensive related material from the national press, mass media, and TV debates about the case, all of which covered the scandal thoughtfully.

After the key aspects of the case were identified and discussed, the researchers started mapping the organizations and individuals that were involved, their actions, and the timeline of events. After the key elements of the corruption scandal were clear to the researchers, team members explored potential theoretical lenses that could offer interesting insights and shed some additional light on the facts. The researchers discussed the applicability of multiple theory streams and developed a comprehensive and coherent theoretical framework (Figure 1). That framework guided the research from that point on. The case studies are analyzed through the lens of the theoretical framework.

4 Case Studies

4.1 The Brazilian Beef Supply Chain

The food industry is considered one of the most important economic sectors for the adoption of sustainable practices, due to its socio-environmental impact and the complexity of food supply chains (Trienekens et al., 2012). These supply chains involve diverse stakeholders (i.e., producers, retailers, distributors, and final consumers) in different geographical locations; for example, producers are often located in less developed countries. There is also high consumer pressure for quality products that respect environmental and social standards and policies (Léon-Bravo and Caniato, 2017). The Brazilian beef supply chain that was responsible for US$ 5.36 billion in exports in 2016 (ABIEC, 2017) must adhere to international sustainability and food standards. Food standards are established by regulators and enforced by designated authority, and are designed to protect consumers' health and to gain consumers' trust in the food system through a transparent system (Reardon *et al.*, 2001). Figure 2 depicts the Brazilian beef supply chain and its main players, entities, and primary and secondary stakeholder groups[1]. The stakeholder group highlighted in Figure 2 is key to this research and represents the domain where JBS operates (among other large operators such as BRF).
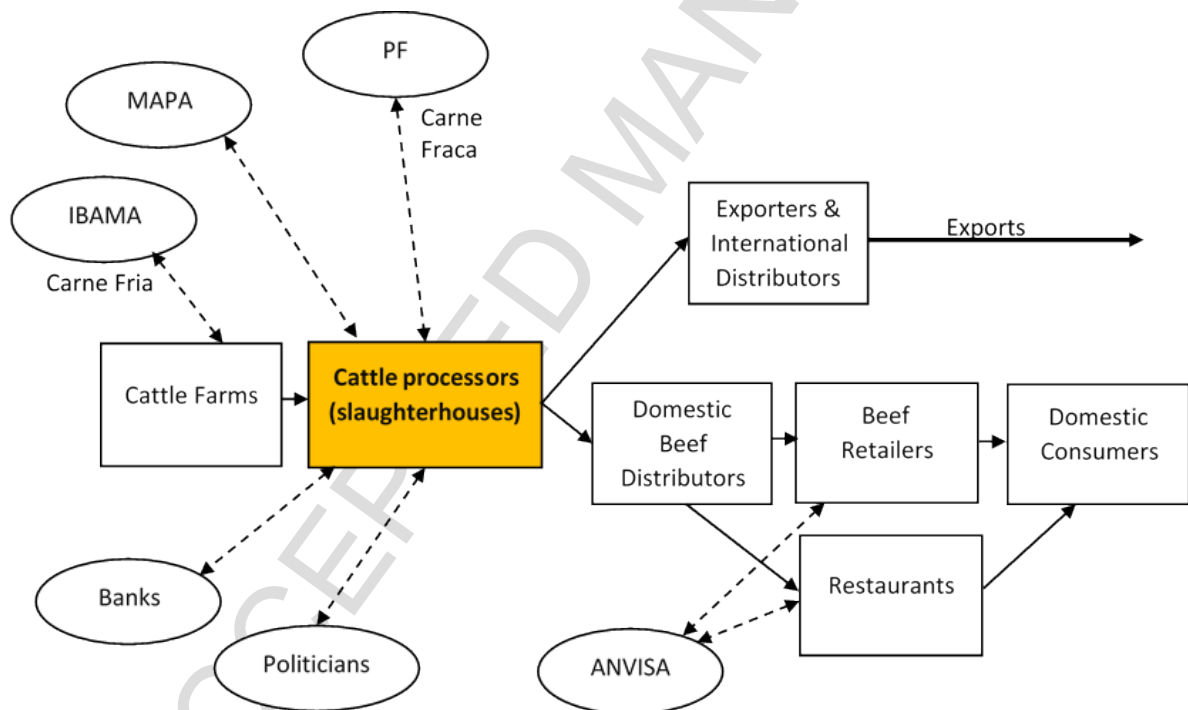
IBAMA – Brazilian Institute for the Environment and Renewable Natural Resources; PF – Brazilian Federal Police; MAPA – Ministry of Agriculture, Livestock and Supplies; ANVISA – National Sanitary Regulatory Agency

Figure 2: Brazilian Beef Supply Chain

According to Vieira (2017), the Brazilian beef industry launched multiple cross-sector initiatives in the last few years. These partnerships involve large beef processors and actors that play key roles in the beef industrial ecosystem. They include producer associations,

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[1] For a detailed description of the main players and stakeholder groups operating in the Brazilian beef supply chain, please see Appendix 1.

government agencies at the national, state, and municipal levels, and international and domestic NGOs and research institutes. The main document driving this movement is a report published by the environmental NGO Greenpeace in 2009, titled "Slaughtering the Amazon" (Greenpeace International, 2009). The report indicated, among other things, that significant environmental damage was being caused by the cattle industry in the Amazon Forest, which led to the imports interruption from Brazilian beef by some importers, retailers and countries.

One of the main multi-stakeholder initiatives (MSI) to respond to the Greenpeace report was developed by the Brazilian Beef Export Association (ABIEC) in 2009 and is called GTPS, which stands for Working Group on Sustainable Livestock (Vieira et al., 2017). It was created to deal with the allegations of environmental crimes in the Amazon Forest and to improve the sustainability performance of the Brazilian beef supply chain. It includes various segments of the beef cattle supply chain such as suppliers, farmers, distributors, retailers, research centres, universities, financial institutions, and civil society (GTPS, 2017). Its main principles are to promote (1) continuous improvement; (2) transparency and ethics; (3) good agricultural practices; and (4) legal compliance (Vieira et al., 2017). GTPS governance is led by an assembly, which includes a fiscal council and a board of directors. The board, in turn, is made up of members representing producers, industries, suppliers, retailers, financial institutions and representatives of workers and NGOs.

Instead of adopting food standards created by global retailers, GTPS is working to develop their own standards based on scientific research from Brazilian universities and research centres. The group considers that there is more legitimacy in a joint initiative such as an MSI, which is democratic and tries to balance interests from the multiple stakeholders involved in the beef supply chain. The governance is more complex than an isolated initiative, but it does not privilege a specific subsector or player. In a similar way, at the global level, there is an MSI called Global Roundtable for Sustainable Beef (GRSB), whose mission is to advance continuous improvement in sustainability of the global beef value chain through leadership, science and multi-stakeholder engagement and collaboration (GRBS, 2017). GTPS has one seat on the GRBS' Executive Committee. JBS is a leading partner in both GTPS and GRBS.

Although these MSIs were launched to improve the sustainability performance and legitimacy of the beef supply chain, the Brazilian beef supply chain has constantly been scrutinized by stakeholder groups for poor social and environmental performance. As an exporting supply chain and common target in trade disputes, the supply chain is visible and some of its most powerful players have been dealing with serious allegations of wrongdoing.

4.2 JBS: The scam's "hub"

The Office of the Prosecutor General reported on the JBS case on April 24th, 2017 to the Supreme Court of Brazil. Leniency was granted to some of the top managers of JBS based on Federal Law No.12.850/2013. If individuals who were involved in the scams provide additional evidence about the scams, they may receive a shorter prison terms if the evidence they provides helps to convict other guilty parties. The lawsuit related to the JBS case was based on the collaborative testimonies of the directors of J&F Investments, in negotiations for a leniency deal. The testimonies of the Chairman of the Board of Directors, the Global CEO and Vice-Chairman of the Board of Directors, the Government and Institutional Relations Executive Officer, and the Institutional Relations Executive Officer, held at the Office of Federal Prosecution on April 4th of 2017, also revealed the involvement of many Brazilian politicians in the corruption scams.

According to the dataset, the operationalization of the scam occurred through the payment of bribes disguised as electoral donations, payment of personal bills, and delivery of cash in kind (often distributed in suitcases) to many key politicians. In exchange for the bribes, these politicians committed to approving measures that would benefit business owners in the domestic beef supply chain. Statements from the testimonies referred to the strong influence of the JBS executives on government decisions, such as the appointment of "friendly" directors for key regulatory agencies and the enforcement authorities and the proposal and approval of generous tax relief laws for the industry. The statements and evidence indicate that this scam distributed more than US$150 million in bribes through JBS between 2010 and 2017.

The scam involved the "collaboration" of top decision-makers in private companies as well as politicians such as governors, members of parliament, senators, ministries, and sometimes even higher levels. For example, the narrative indicated a negotiation with the current President of Brazil, Michel Temer, and his direct personal advisor, Rodrigo Rocha Loures, during secret meetings (often happening late in the evening) on March 6th, 7th, 13th and 16th, 2017. Other secret negotiations with high level Brazilian politicians and officials also took place, and many of those individuals are now serving time in prison. The JBS executives refer to Brazil's policy system as designed to deliberately create difficulties for businesses and individuals, so that opportunistic politicians can sell "easy solutions" in exchange for benefits. The statements suggest that even the most legitimate demands from industry had to be negotiated with government interlocutors, i.e., support for reasonable requests from businesses could only be gained by giving bribes. The testimonies refer to alleged influence peddling in these relationships between businesses and government, which sometimes involved even members of the Judiciary System (i.e., federal prosecutors). All of these scams can be characterized as grand or political corruption in the sense that they involve large sums of money and the highest levels of power in Brazil.

In practice, the scams required businesses to pay key politicians a percentage of the expected profits the companies would achieve due to the changes in laws, regulations, and contracts. Although JBS was a central "hub" in the corruption scams, other private companies were also involved, including major exporters such as BRF S/A, JJZ Alimentos S/A and Frigorifico Larissa LTDA.

4.3 The "Carne Fria"

On March 21, 2017, IBAMA[2] launched an investigation called "Carne Fria" (in English, "Cold Meat") to fight the illegal deforestation of the Amazon Forest. This is an important initiative as cattle farms are responsible for 60% of the accumulated Amazon Forest deforestation. The State of Para had the largest deforestation rate in 2016 (3.025 km²), and it is the 5th largest State in terms of cattle, with 19 million head according to the IBGE[3]. The aim of "Carne Fria" investigation was to identify and charge beef supply chain players that acquired products originating from illegally degraded Amazon areas. Once identified, these areas were embargoed to deter environmental crimes, and the farms could not be used for any economic activity. The embargo included disciplinary measures such as penalties to prevent the

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[2] IBAMA - *Instituto Brasileiro de Meio-Ambiente e dos Recursos Naturais Renovaveis* or, in English Brazilian Institute for the Environment and Renewable Natural Resources

[3] IBGE - *Instituto Brasileiro de Geografia e Estatística*, or in English Brazilian Institute of Geography and Statistics

continuation of the degradation and agreements to implement environmental recovery activities.

In the Brazilian beef supply chain, before acquiring beef products, slaughterhouses, distributors, and retailers are required to check the public list of embargoed areas, which is available at IBAMA's website, to verify if there are environmental irregularities associated with the supplying cattle farms. The tracking system was designed to be transparent and effective, but in practice opportunistic behaviour was evident as members of the supply chain took advantage of existing institutional voids and lack of law enforcement mechanisms.

"Carne Fria" embargoed 20 cattle farms operating in illegally deforested Amazon areas. These farms, which contained more than 58,000 head of cattle, were forced by the Federal Prosecution Service (MPF) to establish an environmental recovery plan for the degraded areas. During the investigation, 15 slaughterhouses that bought cattle from illegally deforested Amazon areas were closed in the States of Para (11 operations), Tocantins (3 operations) and Bahia (1 operation). As all had access to the public list of embargoed areas available at IBAMA's website, no excuses were accepted. Two of these cattle processing operations were run by JBS. Although these scams can be characterized as petty or bureaucratic corruption given the sum of money involved and the level where power was exercised, the "Carne Fria" investigation resulted in accumulated fines of approximately US$80 million.

JBS was accused of leading scams to deceive authorities about the origin of the cattle it purchased. These scams varied from simply purchasing cattle directly from farms operating in illegal areas (e.g., a farm called Nossa Senhora do Carmo) to more sophisticated schemes. For example, cattle from farms operating in illegal areas were sold as coming from farms operating in legal areas (using the name of the latter on the sale document). Another common scam involved the sale of cattle from farms operating in illegal areas to neighboring farms in legal areas. After the sale, the illegal cattle were moved to farms in legal areas, mixed in with the legal cattle, and sold as legal cattle.

Although environmentalists and activist groups celebrated IBAMA's initiative, in March 2017, politicians and industry representatives from the State of Para strongly criticized the "Carne Fria" investigation. They alleged that it was not launched at an opportune moment and that its real intention was to attract attention from the media. The illegal operations of JBS allegedly re-started just a few days after that.

4.4 The "Carne Fraca"

Based on a complaint of an inspector from MAPA[4], the Federal Police of Brazil began the "Carne Fraca" (in English, "Weak Meat") investigation in January 2015 and finished it in April 2017. On March 17th, 2017, the investigation targeted inspectors from MAPA in a licensing scam and faulty inspections of slaughterhouses. Evidence indicates that scams included the use of chemicals to mask rotten beef and sell it at specific retailers, and the injection of water into meat products to increase their weight (and consequently their price). There were also allegations that shredded cardboard was mixed with meat to produce chicken and pork sausages. These products have been sold in both the domestic and international

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[4] MAPA – *Ministerio de Agricultura, Pecuaria e Abastecimento*, or in English, Ministry of Agriculture, Livestock and Supplies

markets. These problems occurred within the domain of ANVISA[5], which remained awkwardly silent during most of the investigation, but later confirmed that it found evidence of these practices in several products and retailer chains (AgroNegocio, 2017).

According to the Federal Police, these scams were within the scope of the Federal Superintendence of Agriculture, which is affiliated with MAPA in the Paraná State. Allegations involving MAPA representatives in other States of Brazil were also raised. The scam worked like this: public agents representing the Federal Superintendence of Agriculture in their States accepted bribes (money and gifts) from players in the beef supply chain in exchange for not reporting and fining them when their operations did not comply with the quality/health standards set by MAPA. Part of the money collected by MAPA's quality inspectors was also directed to politicians from two of the largest political parties in the country (i.e., PMDB and PP).

Twenty-one companies were investigated, including major players in the beef supply chain such as JBS and BRF as well as smaller cattle and chicken processors. The Federal Justice of Paraná listed 56 companies involved in the scams. "Carne Fraca" prosecuted 63 people, who were charged with administrative improbity, corruption, crimes against the economic order, use of prohibited processes or prohibited substances, falsification, adulteration of food products, organized crime, embezzlement, prevarication, use of false documents, and violation of functional secrecy. JBS was accused because some of its employees at one of the group's subsidiaries, SEARA, offered bribes to MAPA inspectors in the Paraná State to so they would sign certificates of health compliance for their operations even though the required inspections were not performed. The investigation concluded that the prosecuted companies committed different types of irregularities, including repackaging of expired products; meat with excess water content; failure to observe the appropriate temperature in cold rooms; signatures of certificates for export without the actual inspections; sale of meat unfit for human consumption; and the use of carcinogens in high doses to hide the characteristics of rotten beef.

In March 2018, the press reported that the Federal Police started the 3rd phase of operation "Carne Fraca" to investigate frauds perpetrated by companies and private laboratories in the beef supply chain. This 3rd phase involved another major export-oriented cattle/beef processing company called Brazilian Foods (BRF), the largest exporter of chicken/poultry in the world. It was alleged that five MAPA-accredited laboratories, along with BRF, had masked results of inspections by recording fictitious data in reports and technical sheets. According to preliminary disclosure, the frauds had the consent of top executives of BRF and employees. Investigations are underway, and if confirmed, BRF will face criminal charges. These facts reinforce the criticality of the damage to the supply chains caused by corruption.

5 Discussion

We argue that supply chains face increasingly significant risks of corruption within their boundaries. Although the corruption risk is also present in parts of the supply chains located in developed countries, this risk is more accentuated for supply chains integrally or partially operating in less developed and emerging economies, where the business environment is more turbulent (Silvestre, 2015a). However, since it is difficult (if possible at all) to find supply

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[5] ANVISA - *Agência Nacional de Vigilância Sanitária*, or in English National Sanitary Regulatory Agency

chains that operate only in developed countries, corruption in supply chains becomes a relevant issue everywhere and for every single supply chain.

One of the most popular mechanisms to manage sustainability in supply chains is to get closer to stakeholders (see Figure 3). In the literature, stakeholder collaboration is typically viewed as the solution for supply chain sustainability issues (Vurro et al., 2009). However, we argue in this paper that in practice stakeholder collaboration may be problematic in highly turbulent business environments (Smart and Vertinsky, 1984) that also have a traditional managerial orientation toward sustainability (i.e., financial reward is the ultimate goal of sustainability initiatives; see for example Dyck and Silvestre, 2018a). The reason is that highly turbulent environments are associated with high complexity, institutional voids, and inefficient law enforcement mechanisms (Silvestre, 2015a). And when coupled with a traditional, profit-maximizing managerial orientation toward sustainability, opportunistic behaviour and corruption often result.
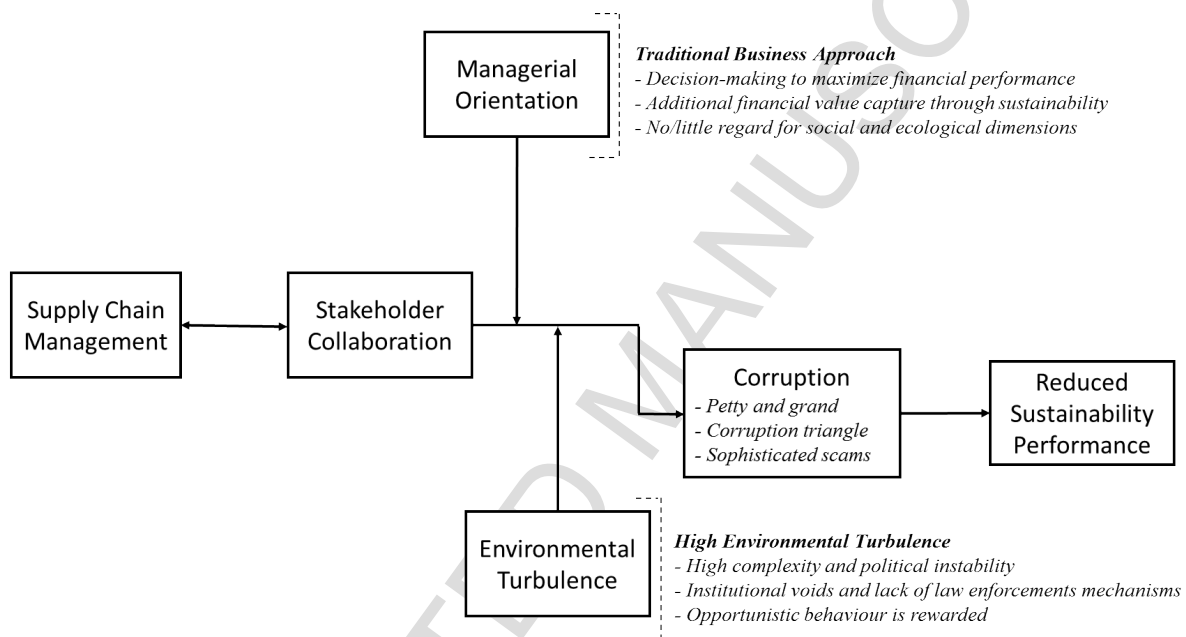

Figure 3: Connection between the Empirical Findings and the Theoretical Framework

Based on the empirical study, we found that in emerging economies like the one explored here, both petty and grand corruption are simultaneously present and strongly connected, i.e., they reinforce each other and motivate individuals and groups to pursue their own self-serving objectives (Argandoña, 2017; IMF, 2016; Nichols, 2017). These elements allow for sophisticated corruption scams to emerge. Although the connection of the local crime network to political interests nationally and internationally is not something new (Chambliss, 1978), the cases examined here suggest that there is a strong connection between petty and grand corruption (i.e., political parties and politicians at the national level benefit from the corruption by MAPA's technical personnel and inspectors, who work for the politicians' interests in exchange for financial benefits). It can be argued that in criminal networks, where the connection between petty and grand corruption is strongly established, it becomes more difficult for the law to disrupt them. This empirical work shows one such intricate case, where a complex criminal network emerged so that the partners in the corruption crimes could protect each other and deceive investigations to assure the continuity of the lucrative scams.

This empirical work also revealed an interesting pattern: corruption was apparent in two types of supply chain relationships: (i) relationships between business representatives (from multiple supply chain tiers) and politicians, and (ii) relationships between business representatives and regulators/law enforcement representatives (in our case, MAPA, IBAMA, ANVISA; see Figure 2). The "politicians" stakeholder group had a strong connection with cattle processing companies (i.e., JBS and other large processors), and in those connections there was a large amount of corruption. The second key area is related to the connections between regulators and law enforcement authorities (e.g., MAPA, IBAMA, ANVISA) and business representatives operating in all tiers of the beef supply chain. These two types of relationships within the Brazilian beef supply chain become even more interesting given the fact that politicians are the ones who have the power to nominate individuals to work in leadership positions in the regulatory and law enforcement agencies, forming what in this paper we call the "corruption triangle" (see Figure 4).
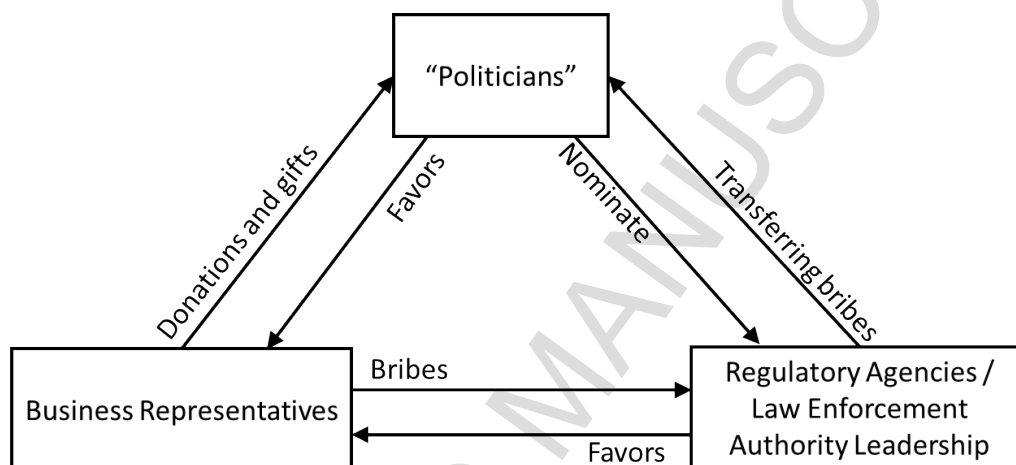

Figure 4: The Corruption triangle

The case studies explored in this paper show that, although in theory stakeholder collaborations (such as MSIs) should help supply chains to resolve their complex social/environmental concerns (Fowler and Biekart, 2017), these initiatives in isolation without a strong commitment from its members are set up to failure (Moog et al., 2015). For example, even though JBS was one of the leading organizations within GTPS and GRSB and one of the most enthusiastic partner of these MSIs, it operated as the "hub" for the corruption scams through which financial resources were organized and distributed. Thus, while some MSIs may be legitimate and may achieve their goal of a more sustainable future (Moog et al., 2015), others are not. Some companies, like JBS within GTPS and GRSB, apparently used them to gain illegitimate competitive advantage. While doing this, they convinced the general public that they were concerned with environmental and social issues when in reality they were concerned only with their self-interest. In these cases, MSIs may work simply as mechanisms for the practice of greenwashing (Blome et al., 2017) and bluewashing (Rasche, 2009). Researchers cannot take anything for granted and, in practice, MSIs must be analyzed and discussed with caution.

Our findings are consistent with studies that argue that businesses and supply chains still follow the old paradigm of financial maximization, instead of more modern approaches to sustainability. Dyck and Silvestre (2018a) critically assess the business motivations for sustainability and propose a more radical approach to resolve the pressing need for

sustainable development, called the Double Bottom Line, where the social and environmental dimensions are equally prioritized in business decisions and the financial dimension becomes subservient to the first two dimensions. The feasibility of this radical idea is still viewed with some skepticism, but movement in this direction is needed if the real benefits of sustainability are to be achieved (Gold and Schleper, 2017; Dyck and Silvestre, 2018b). This lack of emphasis social and environmental issues is perhaps the most relevant aspect hindering improving long-term sustainability performance of firms and supply chains.

The literature suggests that stakeholder management mechanisms are positive elements for organizations and supply chains to employ (Park-Poaps and Rees, 2010) and that hearing stakeholders' voices can be associated with the best practices for sustainable supply chain management (Wolf, 2014). However, corrupt organizations and supply chains can maliciously use otherwise legitimate stakeholder management initiatives such as MSIs to opportunistically deceive the public and allow "partners in crime" to circumvent established norms and regulations. For example, it can be argued that JBS' rapid global expansion between 2005 and 2017, its leadership in the world's beef supply chain, and its activities within key MSIs (i.e., GTPS and GRSB) were all part of a plan to establish power relations that would guarantee financial gains for the company through corrupt practices. This is not consistent with the assumption in the mainstream stakeholder management literature that stakeholder collaboration is a positive thing. The case studies reported here suggest that close relationships with stakeholders (especially politicians and representatives from regulatory and enforcement agencies) may have led to supply chain corruption which reduced sustainability performance.

6 Conclusion

This research contributes to theory, policy, and practice in four ways. First, it connects the issues of sustainable supply chain management and corruption. Although the literature contains a few studies recognizing the problem of corruption in supply chains (e.g., Silvestre, 2015a), this is the first attempt to comprehensively analyze evidence of corruption in a supply chain. This research adds an emerging economy's perspective to the sustainable supply chain management debate, by exploring an export-oriented food supply chain that has been deemed to be ethical, but is fully permeated with corruption. Further research on corruption in supply chains should focus on multiple sectors of less-developed, emerging, and developed economies. Such research will further increase our understanding of the dynamics of corruption, the role of power differentials between key players, and the impact of corruption on supply chains' financial, environmental, and social performance.

Second, this research further elaborates the sustainable supply chain management literature by suggesting that stakeholder collaboration might not be always a "good thing," as it is commonly suggested in the literature (Strand and Freeman, 2015). The evidence presented here suggests that stakeholder collaboration might lead to unanticipated negative outcomes, i.e., some organizations might maliciously use stakeholder management mechanisms such as MSIs to deceive the public and to opportunistically manipulate partners to pursue their own self-interests. Future research in this area should focus on how and why such unethical and illegal initiatives play a role in supply chain corruption, society's perception of these initiatives, and what changes can be made to reduce the chance of these unreasonable activities being repeated.

Third, this research suggests that two specific relationships in the supply chain are often associated with corruption. These are: (i) the relationship between business representatives and politicians (at all levels: local, provincial and national), and (ii) the

relationship between business representatives and regulators/law enforcement representatives (at multiple supply chain's tiers). Further research is called for on these two relationships within supply chains in multiples settings and industries. Such research should focus on understanding how these relationships are established, and how they should be managed by supply chain leadership to reduce corruption.

Fourth, our findings have important implications for practice and policy. The most obvious implication is that *companies* must adopt risk mitigation measures that will help them understand the dynamics of corruption, track the relationships that are most exposed to corruption, and design mechanisms to prevent future corruption. Our findings also provide insights for *regulators and policy makers* on how to identify and disrupt the supply chain corruption triangle (Figure 4). For example, policy makers need to design and implement a new generation of anti-corruption policies and regulations that will reduce the incentive for businesses to engage in corrupt practices. Politicians have much influence when nominating individuals to work in leadership positions within law enforcement agencies, and they must have an incentive to appoint individuals who are committed to reducing fraud in supply chains, such as technical staff internal to those agencies and bodies. Future research should also focus on how supply chain leadership and policy makers perceive and react in practice to corruption issues at different levels.

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Appendix 1:

Primary Stakeholders:

- Cattle Farms: this stakeholder group encompasses the cattle producers, and it includes large producers of cattle in multiple states but mainly those located in the Center-West region of Brazil. The country had 214 million head of cattle in 2015 (the country with largest number of cattle for commercial purposes). http://www.gazetadopovo.com.br/agronegocio/pecuaria/producao-de-carne-bovina-aumenta-45-no-brasil-em-15-anos-diz-mapa-2i5rkl7jp470er1fhm6je8v13
- Cattle processors (slaughterhouses): this stakeholder group encompasses the organizations that process the cattle, and it includes large cattle processing companies such as JBS, BRF, MAFRIG and Minerva as well as smaller operations. Brazil is the second largest beef producer in the world with 9.2 million tonnes of beef (75% for the domestic market), ranking only behind the USA.
- Domestic Beef Distributors, Exporters, and International Distributors: this stakeholder group encompasses organizations that are responsible for the logistics of distributing processed beef (fresh, frozen, and other products) to domestic and international markets. Some of the larger cattle processors have their own distribution/logistics operations.
- Beef retailers: this stakeholder group encompasses the organizations that sell beef products to the final consumers; it includes organizations of various sizes, such as large multinational retail chains (e.g., Carrefour and Walmart) and smaller regional and local retailers.
- Restaurants: this stakeholder group includes large restaurant chains such as Fogo de Chao, Subway, and McDonalds as well as small regional and local restaurants
- Domestic consumers: this stakeholder group includes all final consumers of Brazilian beef in the domestic market.

Secondary Stakeholders:

- IBAMA: the Instituto Brasileiro de Meio-Ambiente e dos Recursos Naturais Renovaveis (or in English, Brazilian Institute for the Environment and Renewable Natural Resources) is the administrative arm of the Environmental Ministry of Brazil. It is responsible for protecting the country's natural resources and preventing deforestation of the Amazon. It launched the "Carne Fria" operation to investigate the supply of cattle from illegal farms in the Amazon region.
- MAPA: the Ministério da Agricultura, Pecuária e Abastecimento (or in English, Agriculture, Cattle-raising and Supply Ministry) is the regulator of the beef industry in Brazil. It is responsible for proposing public policies to stimulate the industry and to regulate and normalize the products and services associated with the beef supply chain. It includes 5 Secretaries and 27 Provincial Superintendences.
- PF: the Policia Federal (or in English, Federal Police) is the police force subordinated by the Justice Ministry of Brazil. It is responsible for a broad range of activities, including protection of the national borders and investigation of crimes of national relevance such as terrorism, drug trafficking, and crimes against human rights, children, and indigenous people. It launched the "Carne Fraca" operation to investigate the supply of rotten beef and the use of forbidden chemical substances in products destined for both the domestic and international market.
- Banks: this stakeholder group includes multiple financial institutions that provide funds for the beef supply chain to operate and expand within domestic and

international markets. It includes public banks such as BNDES, CEF, and BB as well as private banks.

- Politicians: this stakeholder group represents the politicians and lobbyists who work directly or indirectly with/for the beef industry in Brazil. It includes members of the Executive branch such as mayors and state governors, and members of the Legislative branch such as Senators and Congressmen.
- ANVISA: the Agência Nacional de Vigilância Sanitária (or in English, National Sanitary Regulatory Agency) is the regulatory body of the Brazilian government responsible for the regulation, approval, and control of sanitary standards and regulation of the food industry, including the beef/meat industry.

Appendix 2

List of secondary sources

DESCRIPTION	DATE	SOURCE	TYPE
Request for judicial inquiry from the Office of the Prosecutor General to the Supreme Federal Court against high political authorities (170p.)	April 24, 2017	Office of the Prosecutor General (JBS CASE)	1 pdf file (Inq. 0004483)
Request for judicial inquiry from the Office of the Prosecutor General to the Supreme Federal Court with the leniency agreement of the JBS whistleblower, his lawyer and a public prosecutor (51p.)	May 3, 2017	Office of the Prosecutor General (JBS CASE)	1 pdf file (Inq. 0004489)
Petition from the Office of the Prosecutor General to the Supreme Federal Court against high political authorities (106p.)	May 8, 2017	Office of the Prosecutor General (JBS CASE)	1 pdf file (Pet. 0007003)
Supreme Federal Court homologation of the collaboration procedures (2p.)	May 11, 2017	Supreme Federal Court of Brazil (JBS CASE)	1 pdf file (Decision on Pet.0007003)

JBS Delineation	March 16, 2017	G1 news web channel (JBS CASE)	2 audio files. 2 hours length (Inq. 0004483)
First testimony of the Chairman of the Board of Directors of JBS	April 7, 2017	G1 news web channel (JBS CASE)	2 video files. 70 minutes length (Inq. 0004483)
Complementary testimony of the Chairman of the Board of Directors of JBS	April 27, 2017	G1 news web channel (JBS CASE)	1 video file. 20 minutes length (Inq. 0004483)
Official testimony of the Chairman of the Board of Directors of JBS	May 3, 2017	G1 news web channel (JBS CASE)	13 video files. 3,5 hours length (Inq. 0004483)
Official testimony of the Global CEO and Vice Chairman of the Board of Directors of JBS	May 4, 2017	G1 news web channel (JBS CASE)	7 video files. 2 hours length (Inq. 0004483)
First testimony of the Government and Institutional Relations Executive Officer of JBS	April 7, 2017	G1 news web channel (JBS CASE)	1 video file. 15 minutes length (Inq. 0004483)
Official testimony of the Government and Institutional Relations Executive Officer of JBS	May 5, 2017	G1 news web channel (JBS CASE)	17 video files. 4 hours length (Inq. 0004483)
Official testimony of the Government and Institutional Relations Executive Officer of JBS	May 10, 2017	G1 news web channel (JBS CASE)	3 video files. 1 hour length (Inq. 0004483)
First testimony of the Director of the Institutional Relations Executive Officer of JBS	April 7, 2017	G1 news web channel (JBS CASE)	1 video file. 1 hour length (Inq. 0004483)

Official testimony of the Institutional Relations Executive Officer of JBS	May 10, 2017	G1 news web channel (JBS CASE)	1 video file. 0,5 hour length (Inq. 0004483)
Official testimony of the Tax Department Executive Officer of JBS	May 4, 2017	G1 news web channel (JBS CASE)	5 video files. 1 hour length (Inq. 0004483)
Official testimony of the member of the Supervisory Board of JBS	May 4, 2017	G1 news web channel (JBS CASE)	2 video files. 1 hour length (Inq. 0004483)
Official testimony of the financial operator, who participated in the JBS money laundering scam	May 4, 2017	G1 news web channel (JBS CASE)	1 video file. 25 minutes length (Inq. 0004483)
Federal Police Investigation report about the "Carne Fraca" (Weak Meat) Case (163p.)	Jan 14, 2015 to April 15, 2017	Federal Police of Brazil	1 pdf file (Inq. 0136/2015-SR/PF/PR)
Decision of the 14th Branch of the Federal Justice about the "Carne Fraca" (Weak Meat) Case (413p.)	Mar 16, 2017	14th Branch of the Federal Justice of Brazil	2 pdf files (Request for pre-trial detection 5002951-83.2017.4.04.7000/PR)

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