

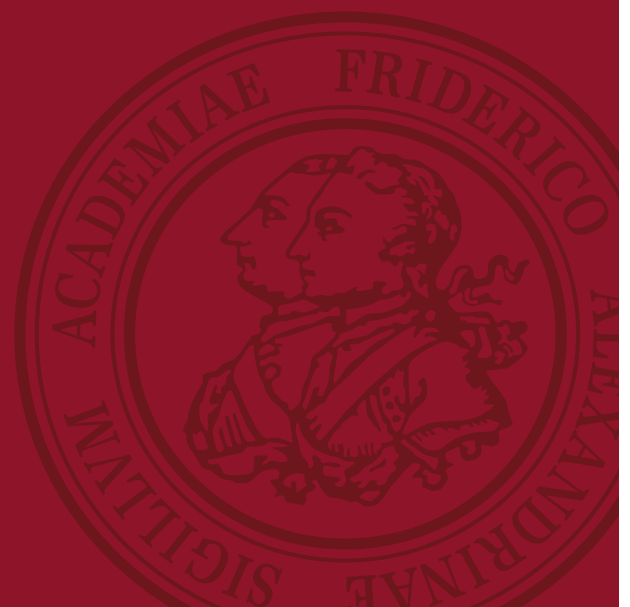
**Exploring corporate value chain responsibility in
environments shaped by complexity, fragmented
sustainability governance and changing
stakeholder expectations**

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Doctoral Dissertation

School of Business, Economics and Society
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Preface

“This world is of a single piece; yet, we invent nets to trap it for our inspection. Then we mistake our nets for the reality of the piece. In these nets we catch the fishes of the intellect but the sea of wholeness forever eludes our grasp. So, we forget our original intent and then mistake the nets for the sea.

Three of these nets we have named Nature, Mathematics, and Art. We conclude they are different because we call them by different names. Thus, they are apt to remain forever separated with nothing bonding them together. It is not the nets that are at fault but rather our misunderstanding of their function as nets.

They do catch the fishes but never the sea,
and it is the sea that we ultimately desire.”

Martha Boles, *Universal Patterns*, 1992

This doctoral dissertation aims to enrich our understanding of how the business firm can take responsibility for its value creation activities in a complex, demanding and continuously changing environment. In particular, this dissertation elaborates on the interlinkages of fragmented sustainability governance and the business firm as well as the multiple internal structural units a firm can use to respond to changing sustainability expectations in its environment. While this goal might seem straightforward and reasonable at first glance, the difficult question remains *how* to do so. Which scientific discipline(s) should be employed? Which theories and conceptual constructs ‘out there’ might help achieve this endeavor? Which methods and research instruments offer promising tools to reach the postulated aim of this dissertation?

Starting with my own, personal opinion, I strongly believe that the success of this dissertation builds upon an interdisciplinary and open-minded research approach, including theories and methods from different scientific disciplines such as business and management research, political science and social sciences. In fact, this way of doing research is tightly linked to the tradition of the School of Business, Economics and Society, where I wrote this doctoral dissertation. More precisely, the school is famous for its interdisciplinary research approach which combines business and economics research with the humanities and social sciences, coined in the term ‘Nürnberger Schule’. During my time as a doctoral student and researcher, I truly profited from this holistic approach of doing research – which allowed me to think freely and act beyond scientific disciplines and borders. Therefore, I feel thankful and honored to contribute my (small) share to the continuation of this interdisciplinary research tradition at the School of Business, Economics and Society at the Friedrich-Alexander-Universität Erlangen-Nürnberg.

Acknowledgments

I would like to express my thankfulness to all the wonderful people, institutions and places that supported the exciting (and sometimes challenging) journey of my doctoral dissertation. First and foremost, I would like to thank my supervisor and mentor Professor Dr. Markus Beckmann for putting faith in me and my work – and also for constantly challenging and improving my thoughts, assumptions and arguments. Furthermore, he supported my dissertation endeavor with invaluable academic advice, patience and the right mixture of intellectual freedom and high scientific standards. By doing so, he enabled me to further develop my personal, professional and academic competences and eventually helped me to become a member of the scientific community. Having said that, I would like to also thank Markus Beckmann for supporting my participation at multiple international research conferences which allowed me to discuss my research projects with peer scholars.

Furthermore, I would like to express my thankfulness to my second supervisor Professor Dr. Matthias S. Fifka for evaluating my doctoral dissertation and for providing multiple valuable scientific contributions in the field of CSR and business ethics which supported the development of my dissertation.

Moreover, a big thank you goes out to all my former work colleagues at the Chair for Corporate Sustainability Management. In particular, I would like to thank the scientific staff for discussing and challenging my research ideas, for all the inspiring moments, for motivating me in times of setbacks and for being wonderful colleagues and friends. Thank you, Dr. Peter Wehnert, Dr. Roya Akhavan, Dr. Dimitar Zvezdov, Laura Heinel, Jennifer Adolph and Fenja Lüders. A big thank you also goes to the research assistants who supported my research projects: Paula Schwarz, Anja Birke and Thorsten Müller. In addition, I would also like to thank Susanne Piehl for her great administrative support and for always finding solutions in daily business.

Moreover, I would like to express my gratitude to the interview partners for providing rich insights to sustainability governance in the global gold sector. I would also like to thank the research community at the School of Business, Economics and Society at the Friedrich-Alexander-Universität Erlangen-Nürnberg as well as all international scholars I met throughout my dissertation journey for supporting my research. In particular, I would like to thank Carolin Baier at the Catholic University of Eichstätt-Ingolstadt for the wonderful collaboration on our joint research article on trade compliance and value chain responsibility.

I wrote large parts of my doctoral dissertation outside my office. Therefore, I would like to thank the German railway company Deutsche Bahn, the Kiel University library, the Bibliothèque nationale de France in Paris and the KIT library in Karlsruhe for providing me an inspiring working space, shelter and internet access.

Last – but certainly not least – I would like to thank my family and friends and in particular my partner Christine Dede for their wonderful support throughout these extraordinary years. In particular, thank you for your patience, your kindness and your faith in me!

This doctoral dissertation entails four individual scientific papers. These four papers are either published in a peer-reviewed scientific journal, submitted to a journal or are prepared for a submission in a scientific journal. All four papers meet the requirements by the School of Business, Economics and Society at the Friedrich-Alexander-Universität Erlangen-Nürnberg for a paper-based dissertation. I ordered and named the four individual papers according to their appearance and logical flow in this dissertation. The respective status of each paper is indicated following the heading of the paper.

I express my deepest gratitude to the publishers Elsevier, Emerald and Springer Nature for granting me permission to publish my research articles in my doctoral dissertation.

Paper I: A governance puzzle to be solved? A systematic literature review of fragmented sustainability governance (journal article published in a double-blind, peer reviewed scientific journal)

Heidingsfelder, J., & Beckmann, M. (2019). A governance puzzle to be solved? A systematic literature review of fragmented sustainability governance. *Management Review Quarterly*, 1–36. <https://doi.org/10.1007/s11301-019-00170-9>

Co-author: Professor Dr. Markus Beckmann

Available online: <https://rdcu.be/bLojW>

Paper II: Private sustainability governance in the making – a case study analysis of the fragmentation of sustainability governance for the gold sector (journal article published in a double-blind, peer reviewed scientific journal)

Heidingsfelder, J. (2019). Private sustainability governance in the making – A case study analysis of the fragmentation of sustainability governance for the gold sector. *Resources Policy*, 63(101462), 1–17. <https://doi.org/10.1016/j.resourpol.2019.101462>

Available online: <https://authors.elsevier.com/a/1ZeGX14YFwvkaA>

Paper III: Investigating the interplay of companies and fragmented sustainability governance – using empirical evidence from the gold sector (manuscript prepared for a submission in the double-blind, peer reviewed scientific journal *Business Ethics Quarterly*)

Author: **Jens Heidingsfelder**

Target journal: *Business Ethics Quarterly* – The Multidisciplinary Journal of the Society for Business Ethics

Paper IV: Hidden allies for value chain responsibility? A system theory perspective on aligning sustainable supply chain management and trade compliance (resubmitted to the double-blind, peer reviewed scientific journal *IJPDLM*)

Baier, C., Beckmann, M., & Heidingsfelder, J. (n.d.). Hidden allies for value chain responsibility? A system theory perspective on aligning sustainable supply chain management and trade compliance.

Co-authors: Carolin Baier & Professor Dr. Markus Beckmann

Target journal: *International Journal of Physical Distribution & Logistics Management (IJPDLM)*

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1 Introduction

In times of severe sustainability challenges resulting from business conduct, companies are increasingly expected to take responsibility for negative effects related to their value creation activities (Busse, Schleper, Weilenmann, & Wagner, 2017; Carter & Easton, 2011; Foerstl, Reuter, Hartmann, & Blome, 2010; Harms, Hansen, & Schaltegger, 2013). In this dissertation, the responsibility a business firm has for the harmful social, ecological and economic effects stemming from its value creation activities is subsumed under the notion of *value chain responsibility* (VCR). Taking value chain responsibility is already a challenging and continuous endeavor. Yet, to complicate matters further, the external environment in which companies are running their value creation activities and VCR efforts is complex and challenging. In more detail, this dissertation focuses on two phenomena in the firm's environment which considerably affect its VCR activities: the *fragmentation of sustainability governance* and the *changing VCR expectations of stakeholders*.

Fragmented sustainability governance describes how the regulatory environment in which firms operate their business and conduct VCR activities is increasingly shaped by multiple and different governance actors (such as NGOs and companies) and governance instruments (such as voluntary sustainability standards and schemes). This fragmentation of the 'rules of the game' for businesses can have ambivalent consequences for the company's capability to take VCR.

Regarding the latter, changing VCR expectations of stakeholders describe how stakeholders draw attention to detrimental social, ecological and economic issues affiliated with the firm's value chain operations and thus demand action from the firm to resolve precisely these issues. Both phenomena have in common that they a) require the firm to draw attention to changes in its external environment and b) potentially result in or call for internal changes within the firm, e.g. regarding the way a firm manages its business operations and addresses sustainability challenges. Against this background, the overall objective of this paper-based dissertation is to *expand our understanding how companies can take value chain responsibility in environments shaped by complexity, fragmented sustainability governance and changing stakeholder expectations*.

In order to do so, the four individual papers of this dissertation provide distinct contributions for academia and corporate practice: Paper I provides a mapping of the scholarly literature on the phenomenon of fragmented sustainability governance, sheds light on different facets of this phenomenon and illustrates management practices to deal with fragmented sustainability

governance. Paper II elaborates on explanatory factors that help us understand the fragmentation of sustainability governance in the empirical case of the global gold sector. Paper III explores how companies as potential governance makers and takers affect and are affected by fragmented sustainability governance. Paper IV sheds light on changing stakeholder expectations and how they might impact the internal structural and functional organization of the firm to take VCR.

The remainder of this dissertation is structured as follows: First, Section 2 provides the conceptual foundations of this dissertation and explains how the four individual papers are tightly interlinked. In more detail, Section 2 introduces the notion of value chain responsibility, clarifies the employed understanding of sustainability governance and its fragmentation and highlights changes in stakeholders' VCR expectations. Second, Section 3 provides a summary of each of the four papers and integrates the key findings of the individual papers. By doing so, Section 3 also elaborates on managerial implications stemming from the findings. Third, Section 4 provides some concluding remarks and outlines promising avenues for further research. In Section 6, the reader can find an extended abstract of this dissertation. The four individual papers that jointly build this dissertation can be found in the Sections 7, 8, 9 and 10, respectively.

2 Conceptual Background and Connecting Elements

The four individual papers of this doctoral thesis advance our understanding of how the business firm can cope with sustainability challenges related to its value creation activities and thus take value chain responsibility. Therefore, the element of corporate *value chain responsibility* resembles the first and overarching connecting element of the individual contributions within this dissertation. Yet, taking value chain responsibility does not take place in a vacuum. Instead, this dissertation emphasizes that aspects of VCR take place in a value chain context characterized by complexity and constant change. More precisely, all four papers address changes in the firm's external environment and how they relate to internal aspects and tasks within the business firm. In more detail, this dissertation highlights how two elements considerably change the firm's environment when a) running its business operations and b) aiming to take value chain responsibility: the *fragmentation of sustainability governance* (Paper I, II & III) and the *complexity of stakeholder expectations* (particularly Paper IV).

The following sections provide a conceptual background on value chain responsibility, complexity in a business environment context, and the elements of fragmented sustainability governance and stakeholder expectations which jointly build the foundations of this dissertation. In order to display the conceptual foundations of this dissertation, Figure 1 illustrates the interlinkages between value chain responsibility and environmental complexity (particularly referring to fragmented sustainability governance and the complexity of stakeholder expectations).

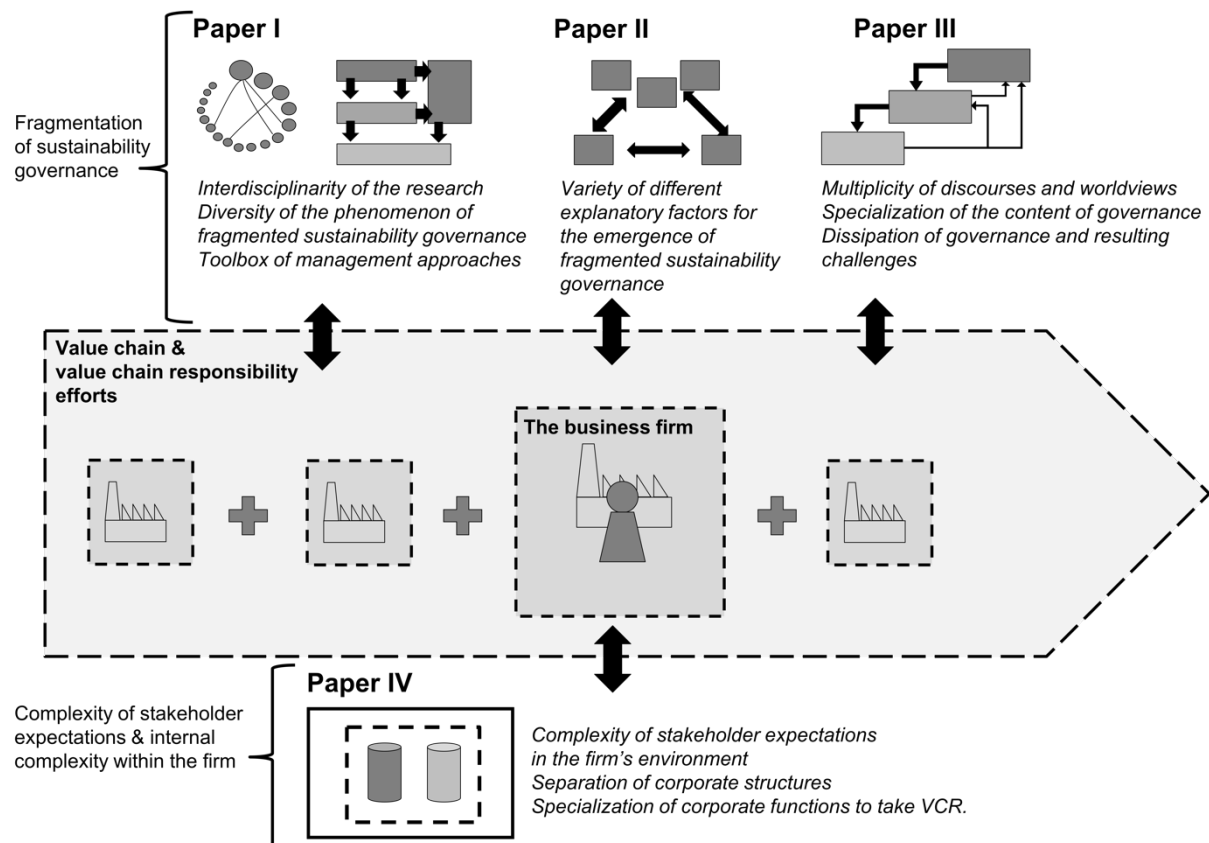


Figure 1 Depiction of the connecting elements of this dissertation and their interlinkages. The respective analytical focus of each paper is indicated in italic

2.1 The business firm and its value chain responsibility

As its point of departure, this thesis argues that in today's world, it is not sufficient for the business firm to optimize and further expand its value creation activities. How come? Corporate decisions and business conduct at one company in the value chain can potentially lead to negative (and oftentimes unintended) social, ecological and economic consequences for employees, business partners and third parties both upstream and downstream the firm's value chain (Letizia & Hendrikse, 2016; Schrempf-Stirling & Palazzo, 2016; Svensson, Ferro, Høgevoid, Padin, & Sosa Varela, 2018). This becomes particularly important considering the globalization of corporate business activities, the increasing interconnectedness and interdependencies of value chain activities as well as the acceleration of global transformations such as climate change which threaten the very existence of humankind.

Against this background, companies are now increasingly pressured by external and internal stakeholder groups to take responsibility for such negative and harmful social, ecological and economic effects affiliated with precisely these value creation activities (Busse et al., 2017; Carter & Easton, 2011; den Hond & de Bakker, 2007; Foerstl et al., 2010; Harms et al., 2013;

Scherer & Palazzo, 2011). In order to maintain its license to operate, the business firm therefore needs to incorporate and address the manifold expectations to take responsibility for the aforementioned unwanted external effects affiliated with its value creation operations.

In corporate practice and academia, the notion of *sustainability challenges* gained popularity to inter alia subsume the harmful social, ecological and economic effects linked to business activities (see Elkington, 1998). For the sake of simplicity, sustainability challenges are understood in the remainder of this dissertation as those challenges that impede humanity to successfully follow sustainable development pathways.

The observation that companies should take responsibility and be accountable for conceivable negative effects affiliated with their business activities is certainly not new. Therefore, it is not surprising that multiple conceptual and theoretical approaches exist to coin the responsibility of the business firm (van Marrewijk, 2003). Amongst them, concepts like corporate social responsibility (CSR), corporate responsibility (CR) and corporate sustainability (CS) are employed and oftentimes used interchangeably. To complicate matters further, individual concepts like CSR are not monolithic but instead developed over time and include a ‘wide range of beliefs’ as well as further conceptualizations and operationalizations (see Latapí Agudelo, Jóhannsdóttir, & Davídsdóttir, 2019).

However, it is not the intention and purpose of this dissertation to engage in the definitional debate on how to frame, conceptualize and define the responsibility of the business firm. Given the complexity of pinning down the notion of corporate responsibility, this dissertation and its four individual papers follow a somewhat pragmatic understanding of the responsibility a business firm has for its value creation activities along its value chain. More precisely, the notion of *value chain responsibility* (VCR) represents the first read thread of this dissertation and is a common element of all four papers. In more detail, all four papers focus on the responsibility of the business firm in a complex and changing environment. In particular, Paper III & IV explicitly employ the term VCR.

In this dissertation, value chain responsibility is understood as the responsibility of a business firm and its value chain partners to address harmful sustainability impacts along the extended value chain, including both upstream and downstream actors and parts of the chain. Furthermore, VCR is used throughout this dissertation because of its following three main features and particularities compared to other concepts in the realm of business responsibility and sustainability.

First, as the name suggests, *value chain responsibility* has a clear focus on the firm’s *value creation* activities along its oftentimes complex and globalized value chain(s). This is important

because many value chains today span several countries and regulatory contexts and do not belong to a single jurisdictional environment. The notion of VCR thus draws our attention *inter alia* to the aspect of (sustainability) governance for steering value chain activities and taking responsibility and the question who creates and provides the ‘rules of the game’ for these value chains.

Furthermore, given the value chain focus, VCR also comes along with a strong value creation component, most prominently in the form of manufacturing and providing goods via global value chains. In this context, so-called focal companies are particularly in the spotlight of VCR, as they a) determine key product features and shape the organization and business conduct of the respective value chain and b) are oftentimes held responsible for negative sustainability effects along the entire chain (Hartmann & Moeller, 2014). Following this line of thought, VCR suggests that companies are in principle capable to influence the business conduct in the value chain and bring about positive change along the chain (Philipps & Caldwell, 2005). Given this strong value chain and value creation focus, VCR leaves aside neighboring aspects of corporate responsibility such as corporate philanthropy, as long as it has no direct link to the capability of the firm to run its value creation operations with its partners in the value chain.

Second, value chains or networks evidentially consist of various actors who need to cooperate in order to successfully run their joint value chain operations. The concept of VCR thus emphasizes that responsibility both upstream and downstream the value chain refers to all value chain actors. Therefore, the success of VCR depends on the cooperation of relevant value chain actors and does not only focus on the individual responsibility or sustainability of a single firm. Third, value chain responsibility takes the entire (or ultimate) value chain into account, thus including both upstream and downstream parts of the chain. This is particularly important because, by doing so, various stakeholder groups along the value chain and their respective expectations on the business firm gain relevance for the firm (Philipps & Caldwell, 2005). VCR hence shows some fruitful linkages to stakeholder theory (Freeman, 1984; Freeman, Harrison, & Wicks, 2007; Philipps & Caldwell, 2005).

In a nutshell, the concept of value chain responsibility resembles a helpful semantics to frame different aspects of corporate responsibility. Yet, business activities and therefore also VCR practices do not take place in isolation. Instead, the business firm is embedded in an external environment which is characterized by complexity and constant change. The following section therefore carves out how and why the firm’s environment experiences changes in complexity.

2.2 Business management and value chain responsibility in light of complexity and changes in the external environment

This section serves to briefly reflect on the notion of complexity in a business context and the observable changes in the firm's external environment. Unsurprisingly, aspects of complexity and neighboring concepts are widely discussed in the business management literature. This includes, but is not limited to, aspects like ambiguity, uncertainty, contradiction or simultaneity (Burnes, 2005; Hall & Rowland, 2016; see Lane & Down, 2010; Skaržauskiene, 2010). Essentially, corporate managers need to deal with these aspects on a daily basis when running their value creation activities. Imagine a European automotive company and its business managers who are simultaneously dealing with multiple tasks and decisions: the organization and successful operation of a deep, multi-tier and supranational value chain with diverse value chain partners (complexity) as well as the commitment to the powertrain system(s) of the near and far future, requiring the selection between gasoline, diesel, natural gas, electric drive or hydrogen (uncertainty and ambiguity). To complicate matters further, precisely these managers also need to recognize and respond to various internal and external expectations from stakeholder groups. Therefore, it became a sort of conventional knowledge in business management practice and literature that one key task (and likewise a key challenge) of management refers to handling complexity and multiplicity. This is *inter alia* addressed in different literature streams of business management such as studies of the firm as an organization, entrepreneurship studies, strategy development, supply chain management or management roles, education, and training. Hence, in a nutshell, it is a key challenge of conventional business management to deal with aspects of complexity. Furthermore, the firm's environment is naturally characterized by complexity and constant change.

But what happens if we add aspects of sustainability and responsibility to the equation? Or put differently, how does the expectation to take value chain responsibility alter our understanding of dealing with complexity in a business management context? As a key read thread, this dissertation elaborates on changes in the firm's environment linked to novel or changing sustainability or value chain responsibility aspects and their potential consequences and interlinkages to internal practices within the firm.

Sustainability – by itself – is already a complex and multifaceted term, concept or idea (Hjorth & Bagheri, 2006; Nabavi, Daniell, & Najafi, 2017; A. Williams, Kennedy, Philipp, & Whiteman, 2017), especially because it focuses on multiple dimensions, manifold stakeholders as well as on inter- and intragenerational aspects (Porter & Derry, 2012). And yet, business managers and companies are increasingly expected to deal with sustainability topics or

challenges (Porter & Derry, 2012; S. Young & Nagpal, 2013). Following this observation, one can argue that sustainability is likely to increase the already high level of complexity the business firm and its managers need to handle. Taking VCR thus becomes an ever more challenging endeavor. Recall the aforementioned example of the automotive company: In times of increasing sustainability challenges and responsibility expectations from stakeholders on the business firm, the automotive company does not only need to handle the existing level of complexity (value chain organization/selection of powertrain system). In addition, it suddenly needs to cope with topics and issues which were previously not ‘on the radar’ of the firm, such as the usage of conflict minerals further down at a distant sub-supplier in the value chain or the negative social and environmental effects caused by the usage of high-tech and seemingly ‘green’ or sustainable powertrain components like lithium batteries in electric vehicles (Thies, Kieckhäfer, Spengler, & Sodhi, 2019).

In order to deal with new and increasingly demanding and complex sustainability topics and challenges, the business firm naturally needs a regulatory environment to provide guidance for the business firm in the form of laws, standards and guidelines to successfully operate its value chain activities and take value chain responsibility. Yet, it remains some sort of paradox that precisely the regulatory environment or governance for complex sustainability challenges can in turn be complex, multifaceted and to some degree *fragmented*. To illustrate this, the following sections introduce the notion of governance and carve out the aspect of governance fragmentation in a VCR context.

2.2.1 Sustainability governance as a prerequisite for value chain responsibility

The regulatory environment can substantially impact the firm’s ability to a) successfully engage in value creation processes and b) successfully take value chain responsibility. Therefore, the following section briefly introduces the notion of *governance* to frame this regulatory environment.

Similar to the aforementioned debate on framing the responsibility of the business firm, the notion of governance is likewise hard to pin down, as governance is ubiquitously and sometimes inconsistently used in the academics and corporate practice (see Welch, 2013). In more detail, the actual definition and understanding of governance are closely linked to the respective analytical level. For instance, “*corporate governance* refers to the rules and practices by which the firm is directed and controlled internally” whereas “*industrial governance* is required to coordinate the inter-organizational dynamics of [...] global value chains” (Bair & Palpacuer, 2015, p. S1, emphasis in original). Again, it is not the purpose of this dissertation to engage in

the definitional debate on framing governance. Instead, this dissertation refers to the notion of governance in an explicit value chain and value chain responsibility context.

Therefore, this dissertation builds upon the argument that, in order to successfully address sustainability challenges and take VCR, an adequate regulatory environment is required (Mena & Palazzo, 2012; Voß & Bornemann, 2011). Governance in this dissertation thus primarily refers to such a regulatory environment and is considered an important prerequisite and enabler to allow the firm to successfully take its value chain responsibility. Considering the level of analysis, governance in this dissertation takes into account regulatory mechanisms both within the firm as well as on a value chain and global level. Overall, this dissertation and its individual papers follow the overarching definition of governance introduced by Williamson (2010). According to Williamson, governance can be understood as “the means by which to infuse *order*, thereby to mitigate *conflict* and realize *mutual gains*” (2010, p. 674, emphasis in original). Building on this understanding of governance, *sustainability* governance is then understood in this dissertation as “the means to provide a regulatory environment (*order*) that enables actors to mitigate or minimize sustainability challenges (*conflict*) and thus allow sustainable development pathways for all (*mutual gain*)” (Heidingsfelder & Beckmann, 2019, para. 16).

As an important note, one has to emphasize that the distinction between *general* governance to set the regulatory ‘rules of the game’ for business firms and *sustainability* governance is sometimes blurry. Paper I elaborates on this distinction and suggests that sustainability governance is specific due to three reasons: It covers the “simultaneous consideration of multiple sustainability dimensions that are relevant for the business firm”, is shaped by the contributions and “involvement of different stakeholder groups” and emphasizes the interlinkages between the value chain responsibility of the business firm and the necessary regulatory environment as a prerequisite (Heidingsfelder & Beckmann, 2019, para. 18).

Throughout this dissertation, sustainability governance and its linkages to VCR play an important role explicitly in Paper I, II and III and to a lesser extent also in Paper IV.

Coming back to the notion of complexity, one has to note that governance is often characterized by some sort of multiplicity or fragmentation. In order to shed some light on the complexity of governance to address sustainability challenges and topics, the following section focuses on the emergence and consequences of the fragmentation of sustainability governance.

2.2.2 The fragmentation of sustainability governance as a common ground for Paper I, II and III

Traditionally, governance was associated primarily or almost exclusively with governmental governance. Thus, nation states and their respective governmental bodies and institutional arrangements were supposedly the ‘default actors’ to set the regulatory environment where companies operate their value creation activities and eventually fulfill their value chain responsibility obligations (de Bakker, Rasche, & Ponte, 2019; Scherer, Palazzo, & Matten, 2009). Put differently, an implicit division of labor was assumed: While governments were the ones to set the ‘rules of the game’ for business actors, companies were considered as apolitical actors that merely aimed to thrive within the provided regulatory framework.

Yet, in light of globalized and ever more complex and intertwined value creation activities, this former division of labor becomes increasingly blurry. In fact, today’s governance for companies, their value creation activities and their potential fulfillment of VCR expectations, is considerably characterized by so-called governance gaps or voids, where governments are either not capable or willing to provide the respective regulatory guidance for companies and their value creation partners (Mena & Palazzo, 2012; Rasche, 2012; Santoro, 2010; Scherer & Palazzo, 2008; Scherer, Palazzo, & Matten, 2014; Whelan, 2012). Consequently, governments as public governance actors find it difficult to provide governance mechanisms and instruments to a) steer corporate business conduct and b) foster sustainability and VCR (Abbott, 2012; Biermann & Pattberg, 2008; Bush, Oosterveer, Bailey, & Mol, 2015; Chkanikova & Lehner, 2015; Smith & Fischlein, 2010).

Given this development, new and oftentimes private governance actors emerged. This includes, but is not limited to, business firms as novel governance actors, civil society organizations, unions or multi-stakeholder initiatives (de Bakker et al., 2019; Grabs, 2018; Holzscheiter, Bahr, & Pantzerhielm, 2016; Johnstone, 2019; Ruggie, 2004; Schouten & Bitzer, 2015; Zeyen, Beckmann, & Wolters, 2016). Over the last 30 years, numerous additional governance actors (Kalfagianni & Pattberg, 2013; Scherer, Palazzo, & Baumann, 2006) appeared in different industrial sectors (Riisgaard, 2011; Schouten & Glasbergen, 2011) and now “increasingly participate in the formulation and implementation of rules in policy areas that were once the sole responsibility of the state or international governmental organizations” (Scherer et al., 2006, p. 506). In more detail, this emergence of new governance actors also included the creation and implementation of novel (and mainly voluntary) governance instruments such as sustainability certifications, codes of conduct, sustainability labels and standard(s) systems (Auld, 2014; Derkx & Glasbergen, 2014; Reinecke, Manning, & von Hagen, 2012). Therefore,

global (sustainability) governance in today's world is characterized by a multitude of different public and private governance actors and a variety of binding, voluntary, formal and informal mechanisms of governance (Boström, Jönsson, Lockie, Mol, & Oosterveer, 2015; de Bakker et al., 2019; Derkx & Glasbergen, 2014; Johnstone, 2019; Marx, 2017).

Against this background, the notion of fragmentation of sustainability governance is increasingly employed by scholars (Acharya, 2016; Biermann, Pattberg, van Asselt, & Zelli, 2009; Fransen & Conzelmann, 2015; Gupta, Pistorius, & Vijge, 2016; Heidingsfelder & Beckmann, 2019; Zelli & van Asselt, 2013) and to some extent business practitioners to describe and subsume the multiplicity, mere quantity and diversity of governance to steer business conduct and the ability to take VCR. In fact, this fragmentation of sustainability governance can be witnessed in multiple commodity sectors (Fransen, 2011; Heidingsfelder, 2019; Schouten & Bitzer, 2015; Turcotte, Reinecke, & Hond, 2014). Furthermore, the topic of sustainability governance fragmentation is gaining attention in different scientific fields, including inter alia political science, law, social sciences and business research (Heidingsfelder & Beckmann, 2019).

Companies can likewise be engaged as governance actors in shaping the regulatory environment for business behavior and value chain responsibility. This observation is anchored in the wider scholarly discussion on the political role of the firm (e.g. Kobrin, 2009; Pies, Beckmann, & Hielscher, 2014; Rasche, 2012; Scherer et al., 2009; Whelan, 2012). In more detail, the first three papers of this dissertation (Paper I, II & III) follow the distinction of companies as governance *takers* and *makers* in the context of sustainability governance (Beckmann, Hielscher, & Pies, 2014; Eberlein, Abbott, Black, Meidinger, & Wood, 2014; see Jinnah, 2017; Scherer et al., 2014; Sundaram & Inkpen, 2004).

In their (traditional) role as governance *takers*, companies first and foremost aim to achieve their value creation purpose in an effective and efficient manner within the given governance environment (Beckmann et al., 2014; Lawton, McGuire, & Rajwani, 2013). Here, companies can be affected by fragmented sustainability governance when aiming to optimize their value creation activities and taking value chain responsibility.

In their (novel) role as governance *makers*, companies are proactively engaged in finding, creating and enforcing governance mechanisms (Mena & Palazzo, 2012; Pies et al., 2014; Scherer et al., 2014; van Oosterhout, 2010). This can e.g. be achieved via individual or collective corporate self-regulation (Beckmann et al., 2014; Néron & Norman, 2008; Rasche, 2012). Here, companies can presumably contribute to a further multiplicity and diversity

(fragmentation) of governance, because they represent governance actors and provide additional governance instruments and mechanisms.

In a nutshell, companies, in their dual role as governance makers and takers, can affect and be affected by fragmented sustainability governance. Therefore, they need to find management approaches to deal with this challenging and multifaceted situation.

As an important note, I want to emphasize that this doctoral thesis aims to treat the notion of fragmentation first and foremost as a “descriptive term” (Pattberg et al., 2014, p. 9f). This is worth mentioning because some scholars (and potentially some of the readers of this dissertation) might associate a negative connotation with the term fragmentation. On the contrary, this dissertation aims to provide a more nuanced and multifaceted picture of the term fragmentation in different contextual settings. In order to do so, it is advisable to embrace the notion of fragmentation with an open mindset.

Within this dissertation, the fragmentation of sustainability governance is a key feature of the first three papers (Paper I, II & III). In more detail, although they share common ground, all three papers shed light on slightly different shades of the fragmentation of sustainability governance. The following three sections therefore introduce the respective conceptualization of fragmentation in Paper I, II and III.

Exploring fragmented sustainability governance in Paper I

Paper I explores the phenomenon of governance fragmentation in three ways: the *interdisciplinarity of the research on fragmented sustainability governance*, the *diversity of the phenomenon of fragmented sustainability governance* and the *toolbox of management approaches* to cope with effects of fragmented sustainability governance.

The first paper of this dissertation maps and synthesizes the scholarly knowledge on fragmented sustainability governance with a particular focus on the business firm in environments of fragmented governance. In more detail, Paper I offers a meta-analysis of the available academic literature on the topic of fragmented sustainability governance. In fact, the topic of fragmented sustainability governance is discussed in various scholarly disciplines which might impede mutual learning between scholarly discourses and corporate practitioners (Heidingsfelder & Beckmann, 2019). Therefore, Paper I introduces a mapping and synthesis of the multifaceted and interdisciplinary academic literature on fragmented sustainability governance (*interdisciplinarity of the research on fragmented sustainability governance*).

Additionally, Paper I treats sustainability governance fragmentation as a multifaceted phenomenon and derives an encompassing synthesis of different types and configurations of fragmentation (*diversity of the phenomenon of fragmented sustainability governance*). Furthermore, Paper I also sheds light on the multiple and diverse management instruments to deal with fragmented sustainability governance (*toolbox of management approaches*).

Exploring fragmented sustainability governance in Paper II

Paper II focuses on the various drivers and mechanisms that help us understand the emergence of fragmented sustainability governance in a single industrial sector. In more detail, Paper II elaborates on different factors that explain the fragmentation of sustainability governance in the global gold sector. By doing so, Paper II focuses on the *variety of different explanatory factors that can explain the emergence and potential continuance of fragmented sustainability governance* in a single commodity sector.

Exploring fragmented sustainability governance in Paper III

Paper III puts the business firm with its dual role as a governance maker and taker in the spotlight of our attention and elaborates how companies can affect and are affected by fragmented sustainability governance. As a conceptual guidance, the third paper refers to the three different stages of rule-finding, rule-setting and rule-following (Pies, Beckmann, & Hielscher, 2010; Pies et al., 2014) to analyze the interlinkages of companies as governance makers and takers in light of fragmented sustainability governance. Essentially, Paper III introduces three novel conceptualizations of fragmented sustainability governance: fragmentation as *multiplicity of discourses and worldviews in the rule-finding stage*, fragmentation as *specialization of the content of governance in the rule-setting stage* and fragmentation as *dissipation of governance and resulting challenges in the rule-following stage*.

2.2.3 Complexity and stakeholder expectations in Paper IV

Paper I, II and III have in common that they explicitly focus on the fragmentation of sustainability governance as a major source of change in the firm's environment. In contrast, Paper IV focuses on the importance of changing, diverging and overlapping stakeholder expectations in the firm's environment and how they eventually influence the internal management of the business firm. In more detail, Paper IV looks at aspects of complexity in at least three ways: the *complexity of stakeholder expectations in the firm's environment*, the

separation of corporate structures in the context of value chain responsibility and the specialization of corporate functions to take VCR.

Using an evolutionary systems theory perspective, the paper elaborates on the complexity of the firm's environment and its importance for the firm's ability to achieve its value creation purpose and take VCR. More precisely, this environment is characterized by various stakeholder groups (e.g. referring to customers, governments, value chain partners, NGOs, the media and many more) with oftentimes diverging expectations on the business firm. As the term value chain *responsibility* emphasizes, companies need to find *responses* to varying and sometimes even conflicting stakeholder expectations.

Shifting our attention to the internal organization of the business firm, Paper IV argues that the two corporate functions sustainable supply chain management (SSCM) and trade compliance (TC) with their respective organizational structures both deliver contributions to the firm's capability to take VCR and thus respond to stakeholder expectations in the firm's environment. Yet, this structural separation of corporate functions to take VCR can presumably decrease the firm's ability to take VCR in an effective and efficient manner. Paper IV thus focuses on the *separation of corporate structures in the context of value chain responsibility* (see Worren, 2016) and the *specialization of corporate functions to take VCR* (see A. Schneider, Wickert, & Marti, 2017).

In a nutshell, the preceding sections illustrated how aspects of complexity in the firm's environment (particularly fragmented sustainability governance and changing stakeholder expectations) are connected to the concept of value chain responsibility. The following section provides a more detailed overview of the four individual papers.

3 Introduction to the Four Papers, Key Findings and Managerial Implications

This section first serves to introduce the four individual papers of this paper-based dissertation in greater detail. Then, in a second step, I carve out the key findings of the four individual papers, integrate them and derive implications for business practitioners. In order to integrate the findings, I take the perspective of business management and introduce a conceptual framework to support my argumentation. The derived implications for the scholarly community and further research suggestions are presented in more detail in the subsequent Section 4.

3.1 Presentation of the four individual papers of this dissertation

This subsection briefly introduces all four papers of this dissertation and displays the motivation and research gap of the respective paper, the targeted research question(s), the unit(s) of analysis, the contribution as well as the research design and methodology of each paper. In order to illustrate the different foci area, Figure 2 puts the four contributions into perspective and contrasts their respective units of analysis.

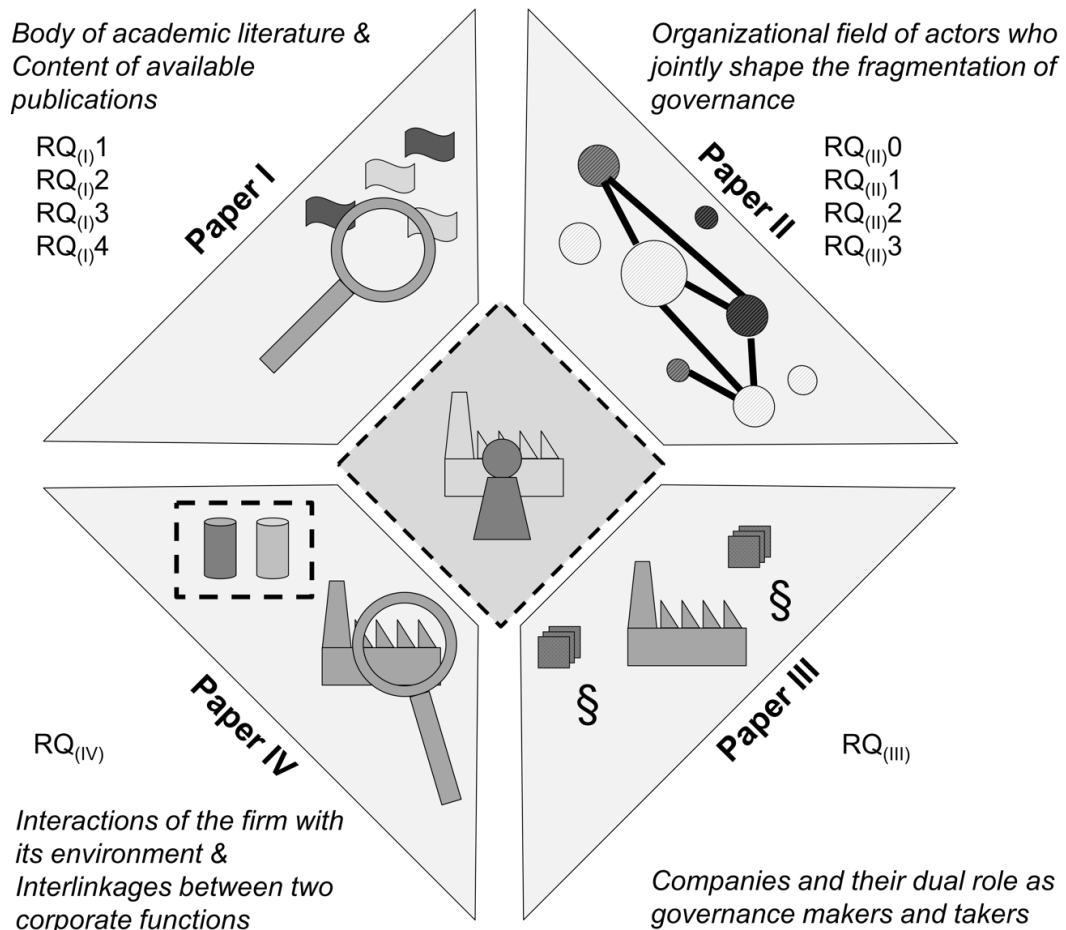


Figure 2 Depiction of the four individual research papers and their respective unit(s) of analysis (depicted in italic)

3.1.1 Paper I: A governance puzzle to be solved? A systematic literature review of fragmented sustainability governance

Paper I: Motivation and research gap

If a company aims to take VCR and/or simply operate its value creation activities in an environment of fragmented sustainability governance, the business firm and its employees need rigorous knowledge and guidance how to do so. One way to acquire such guidance is to consult the scholarly literature. Yet, which scholarly discourse(s) can be consulted to find out more about fragmented sustainability governance and its interlinkages with the business firm? In fact, the topic of fragmented sustainability governance and its potential interlinkages with companies are covered by various scientific disciplines (Heidingsfelder & Beckmann, 2019).

So far, scholars and corporate practitioners are lacking a comprehensive mapping of the academic knowledge on fragmented sustainability governance and its interlinkages with the business firm. Although some scholarly contributions exist (Isailovic, Widerberg, & Pattberg, 2013; Pattberg, Widerberg, Isailovic, & Dias Guerra, 2014), a comprehensive synthesis and

mapping of the literature on fragmented sustainability governance is not available. This might hinder mutual learning both within the academic community (potentially between scientific disciplines) as well as between the scholarly community and corporate practitioners. Eventually, business managers are struggling to find adequate scholarly guidance on how to a) understand the phenomenon of fragmented sustainability governance and b) deal with fragmentation of governance in daily business operations.

Paper I: Research questions

Against this background, the first paper addresses the following four research questions:

RQ_(I)1: *What is the state of interdisciplinary research on fragmented sustainability governance, including its development over time, applied methodologies and occurring journals?*

RQ_(I)2: *What are the most influential publications on fragmented sustainability governance and to which research disciplines can they be assigned?*

RQ_(I)3: *What types of fragmented sustainability governance can be derived from the scientific literature?*

RQ_(I)4: *What are approaches to manage the fragmentation of sustainability governance and how can these approaches be categorized?*

Paper I: Units of analysis

This paper focuses on two units of analysis: First, on a meta-level, the research questions RQ_(I)1 and RQ_(I)2 target the *body of academic literature* on fragmented sustainability governance. Second, the following research questions RQ_(I)3 and RQ_(I)4 dive deeper into existing scholarly articles and focus on the actual *content of the available publications* on fragmented sustainability governance.

Paper I: Contribution

By answering the four introduced research questions, Paper I provides three distinct contributions. First, it provides a thorough and encompassing mapping of the available scholarly knowledge on fragmented sustainability governance, particularly with regard to the role of business. This includes a descriptive analysis of the development of the research, the leading journals and applied methodologies as well as the identification of influential publications and contributions from different scientific disciplines. Second, a more fine-grained characterization of the multifaceted phenomenon of fragmented sustainability governance is developed. Different types and configurations of fragmentation are depicted in a conceptual

framework. Third, the first paper identifies and clusters management approaches to deal with fragmented sustainability governance which has received little scholarly attention so far (Gupta et al., 2016). By doing so, the paper delivers valuable contributions for the scientific community (in terms of mapping and synthesizing the scholarly knowledge on fragmented sustainability governance) and guidance for corporate practitioners (in terms of a ‘map’ to navigate the scientific contributions and a more nuanced characterization of governance fragmentation and management practices to cope with it).

Moreover, the systematic literature review also serves as an important foundation of scholarly knowledge which supports the remainder of this doctoral thesis, particularly considering the research conducted in Paper II and Paper III. Naturally, a great amount of additional scholarly references was identified and used throughout this dissertation. This applies particularly to Paper IV.

Paper I: Research design and methodology

The first paper combines a systematic literature review (SLR) (Denyer & Tranfield, 2009; Garkisch, Heidingsfelder, & Beckmann, 2017; Shabir & Rosmini, 2016) with a citation network analysis (CNA). The SLR builds on six scholarly databases and includes 134 peer-reviewed journal articles published between 2002 and 2017. The approach of a systematic literature review was chosen in order to identify and map the available knowledge on fragmented sustainability governance and its interlinkages with the business firm in a rigorous, transparent and reproducible way. The citation network analysis represents a bibliometric analysis that neatly complements the SLR approach and sheds light on the (missing) interlinkages between the identified journal articles (Colicchia & Strozzi, 2012; Kim, Colicchia, & Menachof, 2018; Wetzstein, Feisel, Hartmann, & Benton, 2018). Furthermore, the actual contents of the 134 identified articles provide an encompassing data set for the following qualitative content analysis, using the software MAXQDA to support the structured content analysis (Macpherson & Holt, 2007; Pittaway & Cope, 2007).

3.1.2 Paper II: Private sustainability governance in the making – a case study analysis of the fragmentation of sustainability governance for the gold sector

Paper II: Motivation and research gap

The first paper in this dissertation maps the scholarly literature on fragmented sustainability governance and synthesizes existing journal articles with regard to different configurations of

fragmentation and management tools to deal with fragmentation. Yet, given the nature of this meta-analysis of the literature, Paper I does not cover the phenomenon of governance fragmentation in a specific and empirical context. Building on the contributions provided by Paper I, Paper II therefore draws our attention to the emergence and persistence of fragmented sustainability governance in one specific industrial sector: the global gold sector. By doing so, Paper II dives deeper into the phenomenon of fragmented sustainability governance and its consequences for the business firm in a specific context. Although numerous studies focus on companies and sustainability challenges in the gold sector (see e.g. Andrews, 2016; Childs, 2008; Mudd, 2007), little is known about sustainability governance to address these challenges and its (potential) fragmentation (Marques, 2016; Mori Junior, Sturman, & Imbrogiano, 2017; Vogel, 2018; S. B. Young, Zhe, & Dias, 2014).

In more concrete terms, Paper II sheds light on the question why sustainability governance is fragmented in the global gold sector in the first place – a question which is highly relevant for both scholars and corporate practitioners. Regarding the scholarly community, Paper II expands our understanding of different factors that can explain the emergence of fragmented sustainability governance in an industrial sector. Therefore, the study builds on and expands existing literature that offers explanations on how and why fragmented governance emerges in industrial sectors (e.g. Reinecke et al., 2012; Smith & Fischlein, 2010; Turcotte et al., 2014; von Geibler, 2013). Regarding the latter, corporate practitioners and managers can strongly benefit from a more profound understanding of the factors that might contribute to fragmented governance in a single industrial sector – because companies are potentially affected by governance fragmentation when operating their business and taking VCR. In order to accomplish this, Paper II provides an exploratory empirical study in the global gold sector.

Paper II: Research questions

In order to elaborate on the emergence of fragmented sustainability governance in the empirical case of the gold sector, Paper II targets the overarching research question:

RQ_(II)0: *How can we explain the emergence of the fragmented sustainability governance for gold?*

In more detail, the three consecutive research questions are used to answer the overarching research question:

RQ_(II)1: *What is fragmented sustainability governance?*

RQ_(II)2: *Which types of general factors can explain the emergence of fragmented sustainability governance?*

RQ_(II)3: *How do general factors for fragmentation and gold-specific factors influence the fragmentation of governance for gold?*

Paper II: Unit of analysis

As its unit of analysis, Paper II directs its attention to the *organizational field of actors* (see DiMaggio & Powell, 1983). In more detail, this includes the interlinkages, relationships and internal composition of eleven sustainability schemes and their respective organizational entities which are engaged in shaping sustainability governance for gold.

Paper II: Contribution

As the fragmentation of sustainability governance can lead to manifold challenges (Bitzer, Francken, & Glasbergen, 2008; Held & Young, 2013; Hospes, van der Valk, & van der Mheen-Sluijer, 2012; Smith & Fischlein, 2010; Zelli & van Asselt, 2013) for companies that operate in a sector characterized by fragmentation, both scholars and business managers profit from a profound understanding of the reasons and drivers behind governance fragmentation. As a first contribution, Paper II derives four general factors from the literature that help explain the fragmentation of governance. Second, the study delivers a holistic analysis of the development and reasons behind the fragmentation of sustainability governance in the gold sector. Third, a conceptual framework is introduced which includes both general factors for fragmentation and specific factors derived from the empirical results. Therefore, the second paper refines and contextualizes drivers of fragmentation in the case of the gold sector. Fourth, the paper critically reflects to what degree the gold-specific drivers of fragmentation could be used to research industrial sectors beyond the case of gold. Overall, Paper II expands the scholarly knowledge on drivers of governance fragmentation and provides explanations for why business managers face a fragmentation of governance in the case of gold – thus serving as a prerequisite to find management answers to deal with this phenomenon.

Paper II: Research design and methodology

The second paper entails an encompassing literature review on explanatory factors that help us understand the emergence of fragmented sustainability governance in industrial sectors in general. This literature review purposefully refers to different scientific disciplines (such as business and economics, political science, environmental studies and law) and inter alia uses the findings of the systematic literature review in Paper I as its point of departure. Furthermore, Paper II entails a case study (Siggelkow, 2007; Sousa & Voss, 2001; Voss, Tsikriktsis, &

Frohlich, 2002; Yin, 2009), building on 26 semi-structured and in-depth interviews with distinguished experts from different stakeholder groups in the gold sector as well as further supplementary documents. The interview data and the supplementary documents were analyzed with a multistage qualitative content analysis (abductive coding).

3.1.3 Paper III: Investigating the interplay of companies and fragmented sustainability governance – using empirical evidence from the gold sector

Paper III: Motivation and research gap

The preceding Paper II advances our understanding of the drivers of governance fragmentation in the specific case of the global gold sector. However, Paper II does not explicitly focus on the interlinkages between companies and the multifaceted phenomenon of fragmented sustainability governance. Therefore, the third paper of this dissertation puts the focus on the business firm and its interlinkages with fragmented governance. In more detail, Paper III is grounded on the observation that governance to address sustainability challenges and guide business operations is nowadays increasingly provided by novel actors beyond governments as the ‘default’ governance setters (de Bakker et al., 2019; Detomasi, 2007; Grabs, 2018; Ruggie, 2004; Scherer & Palazzo, 2011; Scherer et al., 2009; van Oosterhout, 2010). Following this line of thought, companies can fulfill a novel political role when they participate in the finding and implementation of governance approaches through collective and/or individual self-regulation (Beckmann et al., 2014; Mena & Palazzo, 2012; Néron & Norman, 2008; Rasche, 2012; van Oosterhout, 2010).

Yet, as new political actors and governance makers, companies could potentially contribute to a fragmentation of governance as they provide additional individual and collective governance mechanisms. To complicate matters further, companies are still governance takers that strive for value creation within the given ‘rules of the game’. Thus, the third paper works with the important distinction of companies as governance takers and makers (see e.g. Jinnah, 2017; Scherer et al., 2014; Schultze, 2003; Sundaram & Inkpen, 2004). In more detail, the paper elaborates on the question how companies as governance takers and makers affect and are affected by different manifestations of fragmented sustainability governance. In order to do so, Paper III also uses the empirical case of the global gold sector. The third paper shifts our focus towards the actual role(s) of companies in environments of fragmented governance. This provides new insights and food for thought for business managers that are, as governance takers and/or makers, intertwined with fragmented governance in their respective industrial sector.

Paper III: Research question

This paper addresses the following overarching research question:

RQ_(III): *How do companies affect and are affected by different manifestations of fragmented sustainability governance in the case of governance for gold?*

Paper III: Unit of analysis

As the third paper puts the business firm in the spotlight of its research, the respective unit of analysis of Paper III refers to *companies* in their role as governance makers and takers and their *interlinkages* with governance fragmentation.

Paper III: Contribution

As its main contribution, Paper III provides a more fine-grained analysis of the interplay of companies (in their role(s) as governance makers and takers) and fragmented sustainability governance (in terms of different manifestations of fragmentation). To achieve this, the three-tiered ordonomic framework by Pies and colleagues (Pies et al., 2010, 2014) is used as a searchlight to analyze and interpret the empirical findings. In particular, the manuscript delivers a fine-grained understanding of companies in terms of affecting and being affected by the fragmentation of governance at different stages of the three-tiered framework (rule-finding, rule-setting and rule-following). When doing so, the paper also provides a distinction of different manifestations of fragmentation – depending on the analytical location of fragmentation in the three-tiered framework. The third paper contributes to the wider scholarly debate on the political role of the business firm, particularly in a business ethics context. Furthermore, it argues for an ambivalent treatment of fragmentation. Corporate practitioners receive some stimulus to reflect their own position and actions in light of different manifestations of fragmentation and are encouraged to rethink the prevailing negative connotation of governance fragmentation.

Paper III: Research design and methodology

Paper III entails a comprehensive literature review and particularly draws on research from political science and business ethics to lay the foundation of the manuscript. Similar to Paper II, the third paper uses empirical insights from the global gold sector. Paper III incorporates 26 semi-structured expert interviews with different actors from the gold sector, including company representatives and other parties like NGOs and researchers. While the interviews and

interviewees are identical with those used in Paper II, the individual papers focus on different questions and parts of the respective interviews. Therefore, each paper uses a different data set – despite working with identical interviews. Expert interviews were chosen because they help to explore the perspectives of companies as both governance makers and takers in an environment of fragmented sustainability governance. Similar to Paper II, the relevant interview data were manually coded and experienced a qualitative content analysis.

3.1.4 Paper IV: Hidden allies for value chain responsibility? A system theory perspective on aligning sustainable supply chain management and trade compliance

Paper IV: Motivation and research gap

The fourth paper of this dissertation focuses on the interlinkages of the business firm with its changing, complex and demanding environment and respective internal corporate functions to take value chain responsibility in such an environment. Paper IV starts with the observation that companies are more and more supposed to take responsibility for negative sustainability effects affiliated with their upstream and downstream business operations (Busse et al., 2017; Kovács, 2008; Letizia & Hendrikse, 2016; Schrempf-Stirling & Palazzo, 2016). In more detail, these manifold requests to take responsibility are intertwined with increasingly complex and diverse stakeholder expectations in the firm's environment (Gold, Seuring, & Beske, 2010; Harms et al., 2013). Most prominently, according to scholarly knowledge and business practice, the corporate function of sustainable supply chain management is in charge of taking care of the firm's value chain responsibility. Yet, Paper IV argues that the additional and often-overlooked corporate function of trade compliance is also delivering important VCR contributions. Surprisingly, so far, little is known about the interlinkages and potential synergies of SSCM and TC as two corporate functions to take VCR. Against this background, Paper IV elaborates on the potential functional alignment of SSCM and TC in a VCR context.

Paper IV: Research question

The fourth paper addresses the following overarching research question:

RQ_(IV): How can evolutionary system theory explain not only the co-evolution of two distinct VCR functions (SSCM and TC) but also the potential and challenges for their future alignment?

Paper IV: Units of analysis

As its units of analysis, Paper IV focuses both on the *interactions of the business firm with its environment* (characterized by varying and changing stakeholder expectations) as well as the *interlinkages between two internal corporate functions* (SSCM and TC).

Paper IV: Contribution

This paper delivers at least four contributions. First, it contributes to the wider scholarly discussion of using evolutionary systems theory in a business management and organizational studies context (Cooren & Seidl, 2019; Luhmann, 2018). In particular, it applies this realm of theory to the universe of VCR and its interlinkages to SSCM and TC. Second, it puts the often-overlooked function of trade compliance in the spotlight of our attention and into the scholarly debate on VCR and SSCM. This is particularly important and valuable, as so far, sustainable supply chain management represents the ‘default’ function for VCR and thus receives the lion’s share of scholarly attention. Third, the paper carves out potential synergies and challenges of a functional alignment of SSCM and TC to jointly take value chain responsibility. Last but not least, Paper IV provides stimulus for further research and food for thought for business managers by mapping a research agenda. In more detail, the paper introduces nine testable propositions to expand our understanding of a potential alignment of SSCM and TC.

Paper IV: Research design and methodology

In contrast to the first three papers of this dissertation, Paper IV uses an entirely conceptual reasoning approach to answer its research question and build its arguments. More precisely, this paper draws on theoretical foundations of evolutionary systems theory, particularly using the seminal contributions by the German sociologist and philosopher Niklas Luhmann (Luhmann, 2006; A. Schneider et al., 2017; Seidl & Becker, 2006; Thompson & Valentinov, 2017). Evolutionary systems theory is used to understand both VCR related interactions between the firm and its environment as well as the co-existence of SSCM and TC to take VCR. Furthermore, insights from organizational path dependency are used to shed light on potential barriers of aligning SSCM and TC (Sydow, Schreyögg, & Koch, 2009; Wagner, Morton, Dainty, & Burns, 2011).

3.2 Key findings of the four research papers

I use this subsection to present selected key findings of the four individual papers of this dissertation. The subsequent section then elaborates on the integration of these findings based on the perspective of business management as well as on implications for business practitioners.

3.2.1 Mapping the research, configurations of fragmented sustainability governance and management approaches

The key findings of Paper I are structured according to its focus on the *interdisciplinarity of the research on fragmented sustainability governance*, the *diversity of the phenomenon of fragmented sustainability governance* and the *toolbox of management approaches* to cope with fragmented sustainability governance. The findings of Paper I stem from a descriptive and qualitative content analysis of 134 peer-reviewed scientific papers (hereafter called data set).

First, considering the composition of the research on fragmented sustainability governance, Paper I reveals that the academic literature grows since 2013, takes place in various scientific journals and entails contributions from different scientific disciplines. Furthermore, the literature still mainly consists of qualitative studies as well as theoretical and conceptual studies, whereas quantitative studies and literature reviews are scarce. Considering the occurrence of scientific journals, Paper I found that the data set of 134 publications stems from 81 journals with a wide range of scientific backgrounds. More precisely, the two most prominent journals contribute eight publications each and 55 out of 81 journals provide only one publication respectively. An encompassing citation network analysis shows that the ten most commonly cited publications within the data set account for 45% of all citations in the citation network. In contrast, 25 out of 134 journal articles in the sample do not show any citation interlinkages.

Considering the contributions of different scientific disciplines to the scholarly body of literature on fragmented sustainability governance, Paper I found that various scholarly disciplines are involved, yet the identified literature is clearly dominated by political science contributions. In more detail, 15 out of the 20 most often cited publications in the data set can be assigned to the realm of political science, while two belong to business and economics research and environmental studies respectively and one publication to law and legal studies. Although political science publications deliver valuable contributions to understand the multifaceted phenomenon of fragmented sustainability governance, they provide only limited support to understand the interlinkages between the business firm and fragmented sustainability governance. This can partly be explained by the fact that studies in political science address a different and often more abstract level of analysis and predominantly do not consider the

(internal) perspective of the business firm in environments of fragmented sustainability governance. Furthermore, independent of the respective scientific discipline, 54 out of 134 publications address the interlinkages between fragmented sustainability governance and the business firm. Thereof, the majority (31 out of 54) focuses on companies as governance makers whereas the minority (15) looks at companies as governance takers. Surprisingly, the dual role of companies as governance makers and takers is only addressed by five papers.

Second, regarding the phenomenon of fragmented sustainability governance, Paper I carves out different dimensions of fragmented sustainability governance in order provide a more nuanced assessment. More precisely, the paper introduces the dimensions of *ends*, *means*, *context*, *outcomes* and *actors* which can all show variations of fragmentation. These variations of sustainability governance fragmentation are captured in a framework and discussed in more detail in Paper I. By doing so, the framework emphasizes that the actual dimensions of governance fragmentation are multifaceted and thus supports the initial assumption of this paper that the phenomenon of fragmented sustainability governance comes in many forms. In more concrete terms, sustainability governance can be fragmented regarding its ends (what is actually governed?), e.g. considering multiple or selected sustainability topics and dimensions, the means (how is governance provided?), e.g. referring to multiple governance instruments in light of soft, hard and hybrid governance approaches, as well as the context (where is sustainability governance provided?), e.g. considering geographic and sectoral differences of governance. Eventually, the outcome of sustainability governance (with what effect?) can be fragmented, e.g. considering differences in governance quality, effectiveness, maturity and legitimacy. Furthermore, Paper I emphasizes the fragmentation of different governance actors (governments, NGOs, companies, etc.) that contribute to the formation and fragmentation of sustainability governance.

Third, Paper I derives an overview of different management approaches to deal with fragmented sustainability governance from the qualitative content analysis. Given the aforementioned multifaceted nature of fragmented sustainability governance, there is naturally no ‘silver bullet’ to manage it. Instead, Paper I derives three overarching categories of how governance makers can manage governance fragmentation: *coordination*, *convergence & integration* as well as *meta governance*. The management category of coordination leaves the ‘fragments’ of governance untouched and instead focuses on improving the interplay between them. In more detail, this entails instruments such as governance orchestration, agenda setting and complementary governance approaches. The findings reveal that orchestration (the indirect influence on the coordination of governance fragments via intermediaries) is most prominently

covered in the literature and mainly executed by governments and intergovernmental organizations. In contrast, the management category convergence & integration aims to change the existing governance fragments. This entails the altering, alignment or even merging of the content of governance, e.g. referring to sustainability schemes, standards, policies or laws. Last but not least, meta governance is identified as a field of management that provides the ‘governance of governance’. In more concrete terms, meta governance provides guidance and rules for shaping sustainability governance, e.g. by providing standardized processes and quality criteria for setting sustainability standards (Bernstein & van der Ven, 2017).

3.2.2 Exploring general and sector-specific factors that explain the fragmentation of sustainability governance in the global gold sector

The key findings of Paper II cover the variety of *explanatory factors* that help us understand the emergence (and potential continuation) of fragmented sustainability governance in a single commodity sector. The findings of Paper II are based on a comprehensive literature review and a case study in the global gold sector.

In a first step, Paper II derives general explanatory factors of sustainability governance fragmentation from the scholarly literature and conceptually assigns them to four overarching categories: *contextual*, *intra-organizational*, *inter-organizational factors* and the *scope* of sustainability governance. Here, contextual factors refer to the specific industry characteristics and existing regulations that might impact the prevailing (or absent) fragmentation of sustainability governance in a commodity sector. Intra-organizational factors for governance fragmentation refer to the internal interaction mechanisms within governance actors (most prominently multi-stakeholder initiatives) that shape the governance landscape in a commodity sector. This can inter alia refer to the member composition of a governance initiative as well as the given mission and the understanding of sustainability. In contrast, inter-organizational factors describe interaction mechanisms between independent governance actors, e.g. between different multi-stakeholder initiatives (MSIs) that are engaged in setting governance in a single sector. So far, the scholarly literature focuses on competition as an inter-organizational factor to explain the fragmentation of sustainability governance (Gulbrandsen, 2005; Meidinger, 2011; Prado, 2013; Smith & Fischlein, 2010). In addition, the scope of governance refers inter alia to the addressed target group(s) and sustainability issue(s) of the respective governance approach.

In a second step, Paper II then explores how these four general categories of factors are applicable in the empirical case of governance for gold and derives additional, sector-specific

factors that explain the fragmentation of sustainability governance in the gold sector. In more detail, Paper II reveals that, first, the unique characteristics of the gold sector manifest in specific governance needs which are addressed by multiple governance approaches in the form of sustainability schemes and standards (contextual factors). In particular, the value chain architecture of gold (e.g. regarding different buyer markets) and the inherent differentiation between large-scale mining (LSM) and artisanal mining (ASM) and their particularities (e.g. manifesting in different sustainability challenges) explain the multiplicity of different governance approaches. Paper II thus emphasizes the effects of the value chain architecture and its different stakeholder groups on governance fragmentation which has so far received little scholarly attention (see Manning, Boons, von Hagen, & Reinecke, 2012). In addition, the existence of key regulatory references for the sustainability schemes in the gold sector still allow a multiplicity and variation of the content of the schemes. Paper II argues that this could be explained by the vagueness and missing components of precisely these references.

Second, the paper reveals that intra-organizational factors play an important role in explaining the fragmentation of governance for gold. In particular, the initiators and members of the governance setter, the differing organizational logics and ‘business models’, the understanding and conceptualization of sustainability (or responsibility) as well as the actual governance instruments impact the fragmentation of governance. These findings support previous studies on governance fragmentation in different commodity sectors (Bartley, 2007; Dingwerth & Pattberg, 2009; Manning & Reinecke, 2016) and simultaneously draw our attention to the rather novel aspect of different ‘business models’ of sustainability schemes in the gold sector. Furthermore, the paper suggests that intra-organizational factors might resemble distinct hurdles to align or streamline different governance approaches.

Third, somewhat surprisingly, inter-organizational factors only provide limited power to explain the fragmentation of governance in the gold sector. The empirical findings suggest that competition over market shares between governance makers for gold only plays a neglectable role. Instead, governance makers in the gold sector are rather engaged in shaping a mutual vocabulary and previously operated in their individual niches.

Fourth, considering the scope of governance, Paper II reveals that, similar to other sectors, the scope of governance is closely linked to a fragmentation of sustainability governance. In the case of gold, the wide range of content of different governance approaches can *inter alia* be explained by the great variety of sustainability challenges. The scope of governance varies e.g. regarding the separation between single and multi-commodity sustainability schemes as well as the different value chain coverage of sustainability schemes.

To illustrate and integrate these findings, Paper II introduces a conceptual framework which encapsulates both general and gold-specific factors for the fragmentation of sustainability governance in the gold sector.

3.2.3 Introducing a more nuanced understanding of the interplay of fragmented sustainability governance and companies as governance makers and takers

The key findings of Paper III cover different interlinkages between the business firm (as a potential governance maker and taker) and fragmented sustainability governance in the empirical case of the global gold sector. As a key finding, Paper III identifies three novel conceptualizations of governance fragmentation depending on the level of analysis: fragmentation as *multiplicity of discourses and worldviews in the rule-finding stage*, fragmentation as *specialization of the content of governance in the rule-setting stage* and fragmentation as *dissipation of governance and resulting challenges in the rule-following stage*. In more detail, the findings of Paper III reveal how companies in the global gold sector affect and are affected by different conceptualizations of fragmentation in the rule-finding, rule-setting and rule-following stage.

First, the findings of Paper III suggest that the role of companies as potential governance makers is important in the rule-finding discourse (meta-meta game). According to the empirical findings, multiple rule discourses exist that shape the rule-finding processes. This includes a wider societal/political discourse as well as a community discourse. The first discourse is composed of a variety of actors such as governmental bodies, civil society organizations, the media and further stakeholders, whereas the community discourse is embedded in and restricted to the mining and gold industry. Paper III suggests that companies are only to some extent contributing to the wider societal/political discourse and are rather dragged or pushed by external stakeholders to engage in this particular discourse. This can partially be explained by the ‘tradition’ of the gold and mining sector of being a ‘black box’ with few ties to a wider societal discourse. Regarding the community discourse, the findings suggest that (some) companies are indeed proactively engaged in a community discourse with the intention to shape the rule-finding discourse. Here, companies and business associations actively initiate roundtables, MSIs and other platforms to jointly discuss governance needs and wants for the gold sector.

Second, the findings illustrate the engagement of companies in the rule-setting stage (meta game). Paper III thus reveals how companies in the gold sector are involved in collective and individual rule-setting approaches and shape the actual content of resulting governance

instruments (schemes, standards, principles, etc.). Considering collective rule-setting approaches, the findings show that companies are inter alia engaged in MSIs and consultation processes to develop the content of governance approaches. Furthermore, regarding individual rule-setting approaches, companies are actively providing firm-specific codes of conduct and closed supply chains which can particularly be seen at jewelry companies. These collective and individual rule-setting approaches then shape the actual content of the resulting governance instruments. Considering the scope, rigor and applicability, Paper III identifies a wide range of the content of governance approaches in the gold sector. In more detail, preliminary findings in the gold sector suggest a spectrum ranging from ‘best practices’ to ‘entry standards’ with minimum criteria.

Third, in the rule-following stage (basic game), companies, in their role as governance takers, struggle with the availability of multiple sustainability governance approaches to regulate the extraction, processing and trading of gold. In more detail, the findings show that companies are experiencing a lack of orientation considering the landscape of sustainability governance instruments in the gold sector. Hence, the fragmentation of sustainability schemes makes it harder for the business firm to identify and choose the ‘right’ governance tool for its specific governance needs. Furthermore, the findings suggest that multi-commodity companies are particularly experiencing negative effects of fragmented governance in the basic game. This refers particularly to multi-commodity mining and manufacturing companies. In addition, the findings show that, once a company has found its sustainability scheme(s), the handling of the scheme(s) becomes a resource-intensive and challenging endeavor and can e.g. result in a so-called ‘audit fatigue’.

Building on these empirical findings, Paper III expands the three-tiered framework by Pies and colleagues (2010, 2014) and provides a more fine-grained analysis of the interplay of companies with fragmented sustainability governance. The findings and conceptual reasoning in Paper III emphasize that, in the meta-meta game, companies need to cope with two separate discourse arenas (societal/political and community discourse) and their respective ‘languages’, expectations and stakeholders. In the meta game, companies create specific governance approaches for their specific governance needs via collective and/or individual governance instruments and, as a consequence, create numerous sustainability schemes. Last but not least, in the basic game, companies are confronted with business management challenges caused by the prevailing fragmentation of sustainability governance. Against this background, Paper III provides some initial thoughts on harmonization, interoperability and commodity unspecific governance approaches to decrease potential negative effects of governance fragmentation in

the basic game. Yet, these promising solutions need to be implemented in the meta and meta-meta game in order to resolve negative effects of governance fragmentation in the basic game. The paper carves out the importance of feedback mechanisms between the different stages of rule-finding, rule-setting and rule-following in order to prevent or minimize negative effects for involved companies.

3.2.4 Environmental complexity, corporate functions to take VCR, synergies of functional alignment and organizational barriers

The key findings of Paper IV address the *complexity of stakeholder expectations in the firm's environment*, the *separation of corporate structures in the context of value chain responsibility* and the *specialization of corporate functions to take VCR*. As Paper IV resembles a conceptual paper, its findings are based on the application of theoretical perspectives and conceptual reasoning. Furthermore, Paper IV uses illustrative examples from business practice to support its argumentation.

In a first step, Paper IV applies a Luhmannian systems theory perspective (Cooren & Seidl, 2019; Luhmann, 2018) in order to elaborate on the relationship between the business firm (as a system) and its environment. Regarding the latter, Paper IV emphasizes the rising complexity of the firm's external environment, particularly considering the manifold stakeholder expectations a firm has to cope with. Furthermore, in line with systems theory, Paper IV argues that the firm (as a closed and simultaneously open system) has to translate external complexity into internal complexity (A. Schneider et al., 2017). In more concrete terms, the paper elaborates on how two distinct corporate functions with their respective structural entities (departments, teams, etc.) emerged to address specific expectations of the complex environment of the firm and mirror external complexity with internal complexity: The function of sustainable supply chain management emerged to address specific stakeholder expectations, e.g. regarding aspects like working conditions in the extended value chain or issues of environmental pollution. In more detail, the function of SSCM responds to stakeholder concerns to take care of sustainability challenges associated with the firm's value chain (Andersen & Skjoett-Larsen, 2009; Gold et al., 2010; Harms et al., 2013). Likewise, the function of trade compliance (TC) emerged to address selected stakeholder expectations, e.g. regarding the trade of dual-use items, compliance with international trade obligations and supply chain security.

As a key finding, Paper IV compares the corporate functions SSCM and TC and carves out their differences. The paper identifies key differences of both functions regarding the historical origin of the function, critical incidents for its development, the specific contribution of the

function to support the VCR capability of the firm, important stakeholders of the function, the type of applied governance (soft law vs. hard law) as well as exemplary structures that host the function. As an example, SSCM was initially triggered by civil society actors and consumers and rather followed a soft law governance logic, whereas TC was requested by governments, customs and regulatory bodies and thus rather followed a hard law logic. Against this background, Paper IV reveals that SSCM and TC, as separate functions, focus on distinct VCR aspects and can therefore be framed as ‘hidden allies for value chain responsibility’.

In a second step, the paper argues that, considering the evolutionary aspect of systems theory, SSCM and TC are more and more dealing with overlapping or ‘hard to pin down’ sustainability or VCR challenges. In more detail, Paper IV argues that current changes in the business firm’s environment suggest to rethink the separation of SSCM and TC. It is reasoned that it becomes difficult to clearly assign certain sustainability challenges to a single corporate function. This challenge of *functional assignment* can e.g. occur with regard to human rights violations or conflict minerals. Furthermore, the paper suggests that the clear separation into soft law and hard law governance approaches does also not hold true anymore: While SSCM aspects experience a ‘hardening of soft law’, TC aspects, on the contrary, now also experience soft law governance. Following this line of thought, the paper encourages to think about potential avenues for a *functional alignment* of SSCM and TC.

In a nutshell, the paper argues that the rising complexity in the firm’s environment (challenges of functional assignment, blurry boundaries between governance logics, interdependencies between sustainability dimensions, etc.) requires to rethink and change the internal complexity within the firm. Although systems theory suggests that changes in external complexity would sooner or later result in internal changes in the system, real-life observations show that the business firm cannot restructure its organizational structures ‘from scratch’. Instead, Paper IV argues that the capability of the firm to change (e.g. fostering a functional alignment of SSCM and TC) depends on corporate decisions in the past: history matters.

In a third step, the paper therefore works with the concept of organizational path dependencies (Sydow et al., 2009) to carve out distinct hurdles that might impede an alignment of SSCM and TC. In more detail, three system structures are identified which represent barriers for the internal alignment of SSCM and TC to jointly take value chain responsibility. Institutional structures with their respective routines or rules might complicate the synergistic cooperation or even integration of separate functions. Normative and professional barriers might also represent hurdles for an alignment, because different professional backgrounds in the SSCM

and TC function prevail. Closely related, differences in organizational culture could resemble barriers for an alignment.

Fourth, Paper IV develops a research agenda with testable propositions to assess the relationship of the firm with its environment as well as options and barriers for an internal functional alignment of SSCM and TC.

3.3 Integration of findings and managerial implications

This section serves to integrate the aforementioned key findings of the four papers of this dissertation and thus expands our understanding of how companies can take value chain responsibility in a complex, fragmented and changing business environment. In order to do so, this section integrates the findings from a business management perspective and introduces a tentative framework (Figure 3) to capture and display the interlinkages between the findings of the four papers. Furthermore, this section discusses selected implications for business practitioners. In more detail, the integrative framework distinguishes between an *outside-in* and an *inside-out* perspective and draws our attention to the importance of partnerships. As a key element, this section emphasizes how changes in the firm's environment, resulting from fragmented sustainability governance and stakeholder expectations, might impact internal management practices.

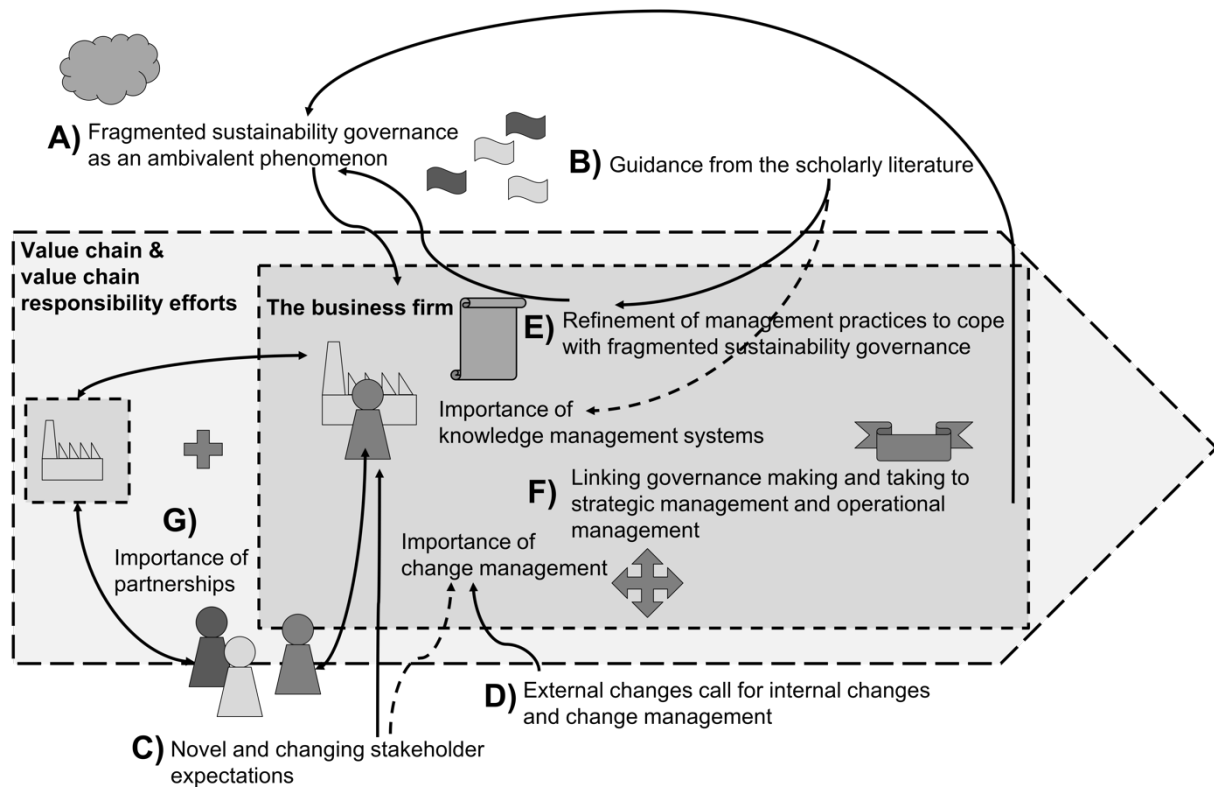


Figure 3 Integration of selected key findings and respective managerial implications. The conceptual depiction shows some selected tentative relations between the revealed findings and derived managerial implications, but does not claim any outright causal effects between the illustrated elements

3.3.1 Outside-in perspective

A) Given its multifaceted nature and contextual dependency, sustainability governance fragmentation can be considered as an ambivalent phenomenon

Paper I, II and III in this dissertation emphasize that the fragmentation of sustainability governance is not a “monolithic phenomenon but instead comes in many forms” (Heidingsfelder & Beckmann, 2019, para. 9). As a key finding and contribution, Paper I therefore provides an initial conceptual framework of different configurations of fragmented sustainability governance, whereas Paper II carves out different drivers to explain the emergence of the phenomenon of fragmented sustainability governance in a single commodity sector. Furthermore, both papers argue that the fragmentation of sustainability governance can be an inherent feature of governance and might to some extent prevail (Heidingsfelder, 2019; Heidingsfelder & Beckmann, 2019; Kalfagianni, 2014; van Asselt & Zelli, 2014). Against this background, this dissertation provides a more nuanced understanding of fragmented sustainability governance and aims to overcome the widespread negative perception of fragmented sustainability governance (Fransen, 2011; Isailovic et al., 2013; Kotze, 2014;

Reinecke et al., 2012; Thauer, 2015; Zelli & van Asselt, 2013). In more detail, the findings of this dissertation emphasize that potential negative and/or positive effects of governance fragmentation strongly depend on the level of analysis and the contextual factors (Paper II & III). But what does this mean for business management?

A key implication is that companies are advised to pay close attention to the phenomenon of fragmented sustainability governance. This dissertation thus provides valuable guidance for business managers to approach the multifaceted phenomenon of fragmented sustainability governance. As Paper III shows, there can be considerable challenges for the firm if it has to run its value creation and VCR activities in an environment characterized by fragmented sustainability governance, such as regulatory confusion or an overburden of handling multiple sustainability schemes and audits. However, seen from another perspective, governance fragmentation can lead to positive effects, e.g. when companies can create specific governance approaches for their specific needs or choose from a variety of standards to achieve the ‘best fit’. Furthermore, a fragmentation of governance does not necessarily lead to overall lower or less ambitious governance approaches – on the contrary, governance fragmentation could e.g. lead to ‘baseline standards’ for companies that just enter pathways of more sustainable or responsible business conduct as well as quite ambitious ‘front runner’ standards for companies that already have ambitious sustainability practices in place (Paper III). Fragmentation could even lead to governance innovations and the avoidance of monopolistic governance structures (Keohane & Victor, 2011; Widerberg & Pattberg, 2015). In a nutshell, building awareness amongst business practitioners for the multifaceted nature of fragmented sustainability governance is a key prerequisite to find adequate management answers to it.

Coming back to the conceptual background on fragmented sustainability governance (Section 2), this dissertation emphasizes that companies (willingly or not) are increasingly becoming governance makers who set the ‘rules of the game’ for their business operations, often in cooperation with civil society and/or governmental bodies. Yet, given the oftentimes negative connotation of governance fragmentation, companies might be reluctant to engage in governance processes. Therefore, as a food for thought, I encourage business practitioners to rather work with notions like governance co-creation/co-production (see Arnold, 2017; see Lund, 2018; see Miller & Wyborn, 2018), participatory governance or collaborative governance (Florini & Pauli, 2018; Lee, Mellahi, Mol, & Pereira, 2019; Moratis, 2016) for addressing sustainability challenges affiliated with value creation activities. By doing so, companies might be more motivated and willing to proactively engage in shaping governance.

B) Receiving guidance from the interdisciplinary scholarly literature should go hand in hand with establishing and cultivating knowledge management systems to develop management approaches for dealing with fragmented sustainability governance

Paper I reveals that the academic literature on fragmented sustainability governance is multidisciplinary and takes place in various scientific disciplines – but with a clear dominance of political science contributions (Heidingsfelder & Beckmann, 2019). Contributions from business and economics research are rather scarce. Furthermore, the multifaceted interlinkages of companies with fragmented sustainability governance still need further elaboration and explanation. Paper II and III therefore provide distinct contributions to deepen our understanding of how fragmented sustainability governance is shaped and how companies affect and are affected by fragmented governance.

Coming back to the interdisciplinary character of the literature and the spreading across different disciplines and academic journals (Heidingsfelder & Beckmann, 2019), it remains a key challenge for corporate practitioners to navigate the complex and multifaceted body of scholarly literature on fragmented sustainability governance and to find the respective piece of information. With its mapping of the scholarly literature, Paper I provides an initial ‘map’ for corporate practitioners to navigate the scholarly knowledge on the phenomenon of fragmented sustainability governance. Nevertheless, it remains a challenging task for business practitioners to translate and adapt the scholarly knowledge to their specific business operations and management tasks.

Moreover, corporate practitioners naturally depend on various additional sources of information to guide their management practices. Companies that are experiencing (negative) effects of fragmented sustainability governance at their value chain operations will presumably not consult the oftentimes inaccessible scholarly literature and instead refer to existing knowledge and action patterns, industry guidelines or the practices of their value chain partners or competitors. Having said that, providing a roadmap of the scholarly knowledge is certainly a valuable contribution for business managers. Yet, it does not diminish the necessity and importance of a well-functioning knowledge and information system within the business firm (Abubakar, Elrehail, Alatailat, & Elci, 2019; Alavi & Leidner, 2001; Iskandar, Jambak, Kosala, & Prabowo, 2017; Wang & Wang, 2016). Therefore, I encourage business practitioners who are coping with the phenomenon of fragmented sustainability governance in their business context to a) dare to dive into the scholarly literature and b) likewise install or expand and cultivate a firm-specific or value chain specific knowledge management system to guide business decisions in regard of fragmented sustainability governance. In more concrete terms,

this could e.g. entail process descriptions for choosing and/or handling multiple sustainability schemes as well as internal policies on how to engage in rule-finding discourses and actual standard-setting processes (e.g. via MSIs). This might particularly pay off for multi-commodity companies that are engaged in numerous governance activities.

In a nutshell, companies are advised to refer both to the scholarly literature and their respective knowledge management system(s) to allow informed operational and strategic decisions in business environments characterized by fragmented sustainability governance.

C) In order to find responses to changes in the firm's external environment, companies are advised to pay increased attention to (novel) stakeholders and their expectations

All four papers of this dissertation highlight how changes in the firm's environment affect the business firm, its value creation activities and its capability to take VCR. In more detail, Paper I, II and III emphasize how the fragmentation of sustainability governance is increasingly becoming a key feature of the firm's regulatory environment. Furthermore, Paper IV highlights how a wide range of stakeholder expectations on VCR increases the complexity of the firm's environment. In particular, Paper IV shows how these VCR expectations overlap and are difficult to assign to a distinct internal corporate function (e.g. sustainable supply chain management or trade compliance). In all four papers, the rising complexity of the firm's environment is linked to the expectations and actions of different stakeholder groups that impact the firm's scope of action. For instance, additional sustainability schemes created by civil society groups and competitors might require a response by the firm (e.g. joining the governance approach, starting an individual one or coping with the consequences of neglecting it). Furthermore, stakeholders at the outer edges of the value chain (e.g. consumers and raw material suppliers) might bring new topics and respective expectations 'on the table' which so far were not on the radar of the firm, e.g. considering aspects of conflict minerals or working conditions far down the value chain (see Paper IV). Eventually, these changes in complexity and stakeholder expectations require internal changes within the business firm (A. Schneider et al., 2017; Thompson & Valentinov, 2017), e.g. regarding internal organizational structures, functions, routines and the allocation of corporate resources, mandates and authority.

In a nutshell, this dissertation draws our attention to the interlinkages between rising external complexity of the firm (particularly considering its regulatory environment) and the firm's stakeholders. Thus, a key managerial implication is that the importance of external stakeholders for the firm's internal capability to run its value creation activities and take VCR in changing environments cannot be overemphasized. Referring to existing studies and conceptualizations

of stakeholder theory (Ackermann & Eden, 2011; Bryson, 2004; Stieb, 2009), this dissertation encourages business practitioners to take respective stakeholders into account when finding internal responses to external increases in complexity.

D) Changes in the external environment (governance fragmentation & stakeholder expectations) call for internal changes and change management

As illustrated in the preceding aspect C, a key managerial implication of this thesis is that companies need to find adequate internal solutions to changes in the external environment of the firm (particularly considering the fragmentation of sustainability governance and the changes in stakeholders' VCR expectations). In more detail, Paper IV argues that a functional alignment of two, oftentimes structurally separated, corporate functions (SSCM and TC) could help the business firm to take value chain responsibility more effectively and efficiently. In addition, Paper I emphasizes the importance of management approaches a firm can internally use to cope with fragmented sustainability governance. Closely related, Paper III reveals how companies as governance takers might struggle with fragmented governance and hence need to employ operational practices. Building on these observations, this dissertation calls for internal management responses to challenges in the firm's environment. Or, put differently, there is a *need for internal change* in light of fragmented sustainability governance and increasing VCR expectations. Thus, the notion of internal change management (Rosenbaum, More, & Steane, 2018; see Todnem By, 2005; see Vora, 2013) offers a worthwhile field of action for the firm. In particular, one key change management aspect could be to rethink the current internal structural organization of the firm to respond to VCR expectations. This is discussed in more detail in Paper IV. In addition, companies are well advised to understand the effects of the novel role of the firm as a potential governance maker for their business conduct (Paper III). Starting from these observations, multiple questions emerge: How should the firm organize its internal responses to VCR expectations? Is there a need to reorganize internal structures of the firm and if so, in which direction and form? How should authorities, mandates and decision processes be changed in light of changing VCR expectations and fragmented sustainability governance in the firm's regulatory environment? Who should be responsible for fulfilling a potential political role in the firm and represent the firm as a governance maker? Which professional backgrounds and competences are needed to successfully cope with the outlined changes in the firm's environment? Given these questions, companies will presumably need to conduct internal changes with the help of change management tools. Furthermore, companies will likely

face internal hurdles when striving for change which can e.g. be explained by path dependencies in the firm (Sydow et al., 2009; Wagner et al., 2011) as illustrated in Paper IV.

3.3.2 Inside-out perspective

E) A management toolbox for coping with fragmented sustainability governance is derived but needs further refining and adaptation to corporate needs and capabilities

Paper I provides an overview and categorization of management approaches (coordination, convergence & integration and meta governance) which can be used by governance makers to proactively deal with unwanted and negative effects of fragmented sustainability governance (Heidingsfelder & Beckmann, 2019). In more detail, the management toolbox provides instruments to all types of governance makers such as governments, civil society organizations and also companies. Hence, the management toolbox offers initial guidance for companies on how to proactively cope with negative effects of fragmented governance in their role as governance makers. However, the majority of the identified management tools are so far primarily tailored for and used by governmental bodies, NGOs and international organizations (Heidingsfelder & Beckmann, 2019). Although companies are now equipped with an initial guidance to address fragmented sustainability governance, they still need to translate and potentially adapt those instruments to their specific corporate needs and capabilities. Furthermore, the toolbox focuses on governance *makers*. Therefore, companies which are still greatly functioning as governance *takers* need to find additional management instruments to cope with downsides of governance fragmentation in their role as governance takers, e.g. considering the handling of multiple sustainability schemes or an overwhelming burden of audits (Heidingsfelder, 2019). To complicate matters further, successful management instruments need to be adjusted to the configuration of fragmented sustainability governance (Paper I) in the respective context of the business firm.

Against this background, companies are encouraged to refer to existing management instruments and routines in other business contexts (e.g. considering supply chain management practices) to further develop and ‘customize’ their very own set of management instruments to deal with fragmented sustainability governance. Put differently, firms can foster the intra-firm transfer of knowledge and best practices to cope with the rather novel phenomenon of fragmented sustainability governance (see Spraggon & Bodolica, 2012; see van Wijk, Jansen, & Lyles, 2008). Again, the ability to manage knowledge within the firm is of great importance

and an adequate knowledge management system can help to store and provide guidance for management approaches to deal with governance fragmentation.

F) Linking the dual role of companies as governance makers and takers with aspects of strategic and operational management

Paper I, II and III employ the distinction of companies as potential governance makers and takers (Beckmann et al., 2014; Eberlein et al., 2014; Scherer et al., 2014) and their possible interlinkages with fragmented sustainability governance. Yet, the challenging question remains how to connect these two roles to aspects of operational and strategic business management. This section therefore elaborates on selected linkages between the role of governance taker and operational management and between governance maker and strategic management, respectively.

Starting with the perspective of governance making, Paper III argues that companies, in their role as governance makers, can be engaged in multiple discourses to influence rule-finding processes (which issues and topics require regulation?) for their respective value creation activities and sustainability challenges. On the one hand, this might resemble a charming possibility for business firms because the engagement in rule-finding processes offers considerable leverage on the resulting (or missing) rule-setting processes. In other words, companies could proactively use the possibility to engage in rule-finding discourses to put their topics and issues on the agenda. Hence, the engagement of the firm in rule-finding discourses can be linked to the strategic management of the business firm, as companies can use this engagement to impact governance in the long run and thus shape the ‘rules of the game’ according to the firm’s interests. On the other hand, it remains questionable if a) the majority of companies is willing to actually engage in rule-finding processes – as this might *inter alia* imply a need for more transparency and opening up to external stakeholders and potentially even competitors – and if b) companies are capable to simultaneously engage in *different* rule-finding discourses, as this might include varying languages, cultural perspectives, values and assumptions in the respective discourse arenas (Heidingsfelder, 2019).

Moreover, considering the actual development and implementation of sustainability governance approaches, Paper III emphasizes that companies can contribute to rule-setting processes, e.g. by engaging in individual and/or collective governance approaches. By doing so, companies can (at least to a certain degree) shape the resulting sustainability schemes and standards and match them with their respective governance needs or wants. Again, the engagement of companies in individual and/or collective rule-setting activities can be

considered as an important field of strategic management. Here, companies have to some degree the possibility to create or choose specific governance approaches for their respective governance needs which might considerably impact the firm's ability to take value chain responsibility and successfully run its value creation activities (see Moratis, 2016). Companies are therefore encouraged to integrate both aspects of rule-finding and rule-setting engagements into their strategic agenda and thus allocate more importance and resources to these rather novel forms of engagement. Eventually, governance making could even resemble an element of gaining a competitive advantage which again emphasizes the relevance of governance making for strategic considerations in the firm.

In addition, the potential integration of rule-finding and rule-setting engagements into strategic considerations of the business firm relates to the wider debate on a potential political role of the business firm (as outlined in Paper III). Given the engagement of companies in various forms of rule-finding and rule-setting activities, a key managerial implication of this dissertation is to rethink the actual role of the business firm. In more detail, this dissertation encourages business practitioners to add aspects of a political role of the firm (Mena & Palazzo, 2012; Pies et al., 2014; Rasche, 2012; Scherer & Palazzo, 2007; Scherer et al., 2009; van Oosterhout, 2010; Whelan, 2012) into the organizational thinking and understanding of the firm. By doing so, practitioners might find more adequate ways to succeed and take VCR in light of (fragmented) sustainability governance.

Regarding the firm's role as a governance taker, Paper III shows how companies can face detrimental effects of fragmented sustainability governance for their conventional value creation activities as well as their capability to take value chain responsibility. In order to deal with negative effects of fragmented sustainability governance, companies need to understand the drivers behind governance fragmentation (which is covered for one commodity sector in Paper II). Moreover, they need to find and adapt instruments to cope with governance fragmentation, e.g. referring to structuring decision processes for choosing sustainability schemes or streamlining internal processes between different departments that are affected by sustainability governance requirements (e.g. the purchasing department and quality department). Hence, governance fragmentation can be considered a worthwhile field for operational management. However, although companies might be able to optimize and refine their operational management responses to fragmented sustainability governance in a rule-following context, Paper III argues that long-term and fundamental improvements need to be found in the rule-finding and rule-setting processes. Therefore, companies are once again

encouraged to participate in precisely these processes and treat them as an issue of strategic management.

3.3.3 Importance of partnerships

G) Partnerships are essential to successfully take value chain responsibility in a complex and demanding environment

So far, this dissertation primarily speaks of ‘the business firm’ and how it aims to take VCR in an environment characterized by manifold stakeholder expectations and fragmented sustainability governance. However, taking VCR does not take place in isolation – on the contrary: Firms are required to find adequate partners to jointly take value chain responsibility along their value chain operations. Metaphorically speaking, the capability of a single firm to take VCR is oftentimes impacted by the ‘weakest link’ in the chain, e.g. represented by a supplier far down the chain. Furthermore, as Paper I, II and III show, sustainability governance is shaped by a multitude of governance actors. If a company aims to shape governance according to the firm’s specific governance needs, it will oftentimes need to find supporters and partners to jointly achieve this in the rule-finding and rule-setting processes (Paper III). Likewise, the management of fragmented sustainability governance presumably requires the joint efforts of different actors, e.g. regarding the cooperation of companies with governmental bodies and civil society and/or even competitors. As Paper I highlights, the management category of orchestration requires precisely such a cooperation of different actor types.

A key implication of this dissertation is that companies, on their journey to take VCR, are well advised to proactively use partnerships and cooperation practices with different actor groups (governments, civil society, value chain partners and maybe even competitors). By doing so, the business firm might be able to get access to additional resources, capabilities and skills and also receive or increase its legitimacy. Considering the shaping of sustainability governance in the rule-finding and rule-setting processes, companies might refer e.g. to the approach of *strategic alliances* (see Canzaniello, Hartmann, & Fifka, 2017; Dacin, Oliver, & Roy, 2007; Lin, 2012) in order to coordinate their governance needs and preferences with peer companies and then jointly advocate for joint governance approaches. This could also imply to cooperate with competitors in the rule-finding and rule-setting processes in order to reach common rule interests and governance approaches for VCR aspects which relates to aspects of *business cooperation* (see Bengtsson & Kock, 2000; see Padula & Dagnino, 2007).

Furthermore, *within* the firm, partnerships and cooperation between different corporate functions and their respective structural units (teams, departments, etc.) are also important to successfully take VCR, as highlighted by Paper IV. It remains a key management challenge to foster internal partnerships and cooperation between the firm's internal structural units to fulfill VCR expectations. A promising approach to improve this form of cooperation is the concept of communities of practice (CoP) (Corso, Giacobbe, & Martini, 2009; Forsten-Astikainen, Hurmelinna-Laukkanen, Lämsä, Heilmann, & Hyrkäs, 2017; Wenger, McDermott, & Snyder, 2002). Essentially, the concept of CoP aims to offer platforms for exchange and tools for cooperation for business practitioners from various organizational departments or teams who share a common concern or goal. In the context of this dissertation, CoP could thus provide structured and systematic tools to bring together practitioners who want to cope with VCR challenges. Put differently, CoP resemble a promising approach to replace or complement *incidental* cooperation within the firm with *intended* cooperation.

4 Concluding Remarks and Further Research

This dissertation advances our understanding of how companies can respond to value chain responsibility expectations in environments shaped by complexity, fragmented sustainability governance and changing stakeholder expectations. With the help of different methodological approaches and theory perspectives, the four individual papers of this dissertation provide distinct contributions and implications for business practitioners as outlined in the preceding sections.

Furthermore, complementary to the individual contributions, this dissertation expands our knowledge on VCR in complex environments in the following ways: First, this dissertation emphasizes the need to rethink the role and organization of the business firm in light of increasing VCR expectations and changes in environmental complexity. This includes to take into consideration a potential political role of the business firm and the resulting tasks and responsibilities. To this end, this dissertation tightly links to the overall scholarly debate on the political role of the business firm. Simultaneously, this dissertation also contributes to the scholarly discussion on refining the role of the firm and its relationship with society (see Thompson & Valentinov, 2017). This dissertation also provides some food for thought to rethink traditional organizational structures to provide corporate functions to take VCR in an ever-changing and complex value chain environment. By doing so, it contributes to the emerging scholarly debate on ‘organizing for sustainability’ (Rasche, de Bakker, & Moon, 2013). Second, this dissertation emphasizes the importance of partnerships and cooperation with external and internal stakeholders in order to take value chain responsibility in times of fragmented sustainability governance and changing stakeholder expectations. By doing so, it provides some stimulus e.g. for the scholarly discourse on stakeholder theory. Third, as indicated in the conceptual background, this dissertation is embedded in the greater discourse on corporate social responsibility and corporate responsibility. By following the notion of value chain responsibility, this dissertation deliberately focuses on the firm’s responsibility considering its value creation activities with partners along complex and multi-tier value chains. Thus, scholars and practitioners interested in CSR and CR can gain insights from this dissertation and its focus on VCR. Moreover, it contributes to the scholarly debate on connecting corporate social responsibility to aspects of governance and regulation (Arora, Kourula, & Phillips, 2019). Last but not least, this dissertation also emphasizes that terms like fragmentation or complexity, despite their oftentimes negative connotation, can also imply opportunities and positive effects – depending on the contextual settings. In this regard, this dissertation sheds more light on the ambivalence of fragmented sustainability governance.

Overall, this dissertation provides several key contributions for both academia and corporate practitioners. While these contributions expand our knowledge in the realm of VCR, fragmented sustainability governance and changes in stakeholder expectations, they simultaneously point out what we do *not* know. I therefore highlight four promising avenues for further research in the following paragraphs.

The advancement of our understanding of value chain responsibility in a complex environment

This dissertation sheds light on changes in the firm's environment and their interlinkages to the firm's VCR obligations and capabilities. As a key contribution, this dissertation analyzes factors that explain the fragmentation of sustainability governance in the particular case of the gold sector (Paper II) and how companies interact with governance fragmentation in their roles as governance makers and takers (Paper III). While these contributions offer important insights, they are not directly applicable to other industrial sectors beyond the gold sector. Therefore, I suggest further research on a) the drivers of governance fragmentation in other commodity sectors and b) the analysis of the interlinkages of companies with fragmented sustainability governance across different sectors and branches. This could be achieved by conducting further empirical and cross-case studies.

Adding to this, Paper IV draws our attention on changes in the firm's environment and on how different internal corporate functions (SSCM and TC) might be affected by these changes. Given its theoretical and conceptual nature, Paper IV does not provide any empirical insights. Therefore, I encourage researchers to elaborate on potential synergies of SSCM and TC to jointly take value chain responsibility in a real-life context. This could be done by conducting expert interviews with SSCM and TC professionals in different companies as well as with the help of field research (e.g. using shadowing techniques or observations).

The question of competences

The four individual contributions explore how changes in the firm's environment (particularly fragmented sustainability governance and changing stakeholder expectations) are intertwined with the notion of value chain responsibility. Building on these insights, this dissertation suggests that companies and their leaders, managers and employees might require novel competences (or bundles of competences) in order to successfully run corporate value creation operations and take VCR. This claim becomes most comprehensible when considering the dual role of companies as both governance takers and makers in light of (fragmented) sustainability governance. As companies are traditionally not perceived as political actors by default, to the

best of my knowledge, little is known about the necessary organizational and personal competences the firm and its employees need in order to fulfill the novel role as a governance maker. Further research is therefore needed to explore the organizational and personal competences which are required for this novel role. Likewise, little is known about the needed competences to manage or cope with fragmented sustainability governance from the perspective of the firm as a governance taker (see Dorsch & Flachsland, 2017; see Ewert & Maggetti, 2016). In order to do so, I encourage peer researchers to use explorative qualitative approaches, e.g. in the form of expert interviews with corporate practitioners at different hierarchy levels and across different business sectors. Furthermore, longitudinal studies seem promising, as they might help to explore the development (or variation) of organizational and personal competences over time, e.g. considering the long-time engagement of a firm in a multi-stakeholder initiative. Exploring potential competences of the business firm in a VCR and governance context can build on existing scholarly contributions on corporate competences (e.g. Osagie, Wesselink, Blok, Lans, & Mulder, 2016; Osagie, Wesselink, Blok, & Mulder, 2019; Osagie, Wesselink, Runhaar, & Mulder, 2018; Pies et al., 2010).

The quest for theoretical advancements

As a distinct contribution, this dissertation applies insights and concepts from a Luhmannian evolutionary systems theory perspective (Cooren & Seidl, 2019; Luhmann, 2018) to the realm of value chain responsibility and respective corporate functions and structures to take VCR (Paper IV). By doing so, this dissertation aims to further position the seminal contributions on systems theory by Niklas Luhmann in the business, economics and organizational studies scholarly community. Considering the other three papers (I, II & III), insights from political studies, social sciences and business and economics research are employed to understand facets of the phenomenon of fragmented sustainability governance and its interlinkages with the business firm. Yet, there is, to the best of my knowledge, no sophisticated and widely accepted theory to frame and research fragmented sustainability governance. Against this background, I call for research to further develop theoretical insights regarding the phenomenon of fragmented sustainability governance and in particular the role of business firms in environments of fragmented governance. When doing so, it might resemble a worthwhile journey to consider aspects of evolutionary systems theory to better understand this phenomenon. Furthermore, the theory branch of complexity theory might also be a valuable point of departure (see Anderson, Meyer, Eisenhardt, Carley, & Pettigrew, 1999; Brodbeck, 2002; M. Schneider & Somers, 2006).

In addition, all four papers highlight changes in the firm's environment and how they eventually relate to VCR, business conduct and internal practices within the firm (e.g. considering the structural and functional organization to cope with VCR expectations). Thus, I suggest to use insights from contingency theory to further research the outlined field of interest of this dissertation (Husted, 2000; van De Ven, Ganco, & Hinings, 2013; P. Williams, Ashill, & Naumann, 2017). Aspects of contingency theory offer a promising searchlight because they draw our attention to environmental conditions and how they might impact the organization and scope of action of the business firm.

The engagement of business and economics scholars

This dissertation builds upon various streams of literature, including, but not limited to, political science, business, economics and management studies, social sciences, organizational studies, systems thinking as well as business ethics literature. Yet, considering the findings in Paper I, this dissertation emphasizes that business and economics scholars have so far shown rather little interest for the phenomenon of fragmented sustainability governance. Instead, political science scholars provide the lion's share of scholarly contributions to understand this phenomenon. Although political science scholars provide valuable contributions, they often focus on a rather abstract level of analysis and neglect the role of the business firm and its specific (management) questions when operating its business and VCR activities in light of fragmented governance (Heidingsfelder & Beckmann, 2019). Therefore, I invite scholars from the business and economics community to incorporate aspects of fragmented sustainability governance and its linkages to the business firm into their research agenda. Doing so might resemble a first step to provide guidance for corporate practitioners to successfully cope with fragmented governance.

5 References

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6 Extended Abstract

Considering severe sustainability challenges resulting from business conduct, companies are increasingly expected to take responsibility for the negative social, ecological and economic effects related to their value creation activities. In this dissertation, corporate efforts to cope with sustainability challenges related to value creation activities are summarized under the notion of value chain responsibility (VCR). Yet, value chain responsibility is not taking place in a vacuum. Instead, this dissertation emphasizes that aspects of VCR take place in a value chain context characterized by complexity and constant change. In particular, two phenomena are important in this regard: the *fragmentation of sustainability governance* and the *changing VCR expectations of stakeholders*. Fragmented sustainability governance describes the complex regulatory environment in which business firms operate their value creation activities and VCR efforts. Changing stakeholder expectations describe how stakeholders in the firm's environment are increasingly drawing the firm's attention to (novel) sustainability topics and challenges which require adequate responses. Furthermore, these two phenomena have considerable interlinkages to the firm's internal management practices and organization and thus represent two worthwhile fields of business management research. Against this background, the overarching objective of this paper-based dissertation is to *expand our understanding how companies can take value chain responsibility in environments shaped by complexity, fragmented sustainability governance and changing stakeholder expectations*.

To achieve this, this dissertation builds on the findings and contributions of four individual papers: Paper I starts with the premise that, in order to proactively cope with (negative) effects of fragmented sustainability governance, companies need guidance. Therefore, Paper I provides an initial 'mapping' of the scholarly literature on the phenomenon of fragmented sustainability governance and its interlinkages with the firm. In order to achieve this, Paper I uses a systematic literature review consisting of 134 peer-reviewed journal publications as well as a citation network analysis to find out more about the composition of the research. Simultaneously, Paper I uses the content of the identified publications to derive a conceptual framework of the multifaceted phenomenon of fragmented sustainability governance as well as to introduce a preliminary overview of management tools to cope with fragmented governance.

Paper II suggests that, in order to be able to deal with fragmented sustainability governance in a particular industrial sector, business practitioners first need to understand the drivers and reasons behind the emergence of a fragmented governance landscape. Therefore, Paper II derives general explanatory factors from a literature review that help us understand the emergence of fragmented sustainability governance. With the help of an encompassing case study and 26 in-depth expert interviews, Paper II explores the drivers of governance fragmentation in the empirical case of the global gold sector. As a key contribution, Paper II introduces a conceptual framework which contextualizes general and gold-specific explanatory factors for governance fragmentation.

Paper III starts with the premise that companies are nowadays also actively shaping the 'rules of the game' of business conduct and value chain responsibility in their novel role as governance makers. Companies could thus presumably not only be affected by fragmented sustainability governance but instead also contribute to this fragmentation or multiplicity of governance in the first place. In more detail, Paper III explores how companies are affected by and affect the fragmentation of sustainability governance in the empirical case of the global gold sector. By doing so, the paper employs the conceptual framework by Pies, Beckmann and Hielscher (Pies et al., 2010, 2014) that distinguishes between the stages of rule-finding, rule-setting and rule-following as a searchlight for analysis.

Paper IV leaves the realm of fragmented sustainability governance. It focuses on changing stakeholder expectations in the firm's external environment and on how these changes might require internal changes within the firm. As a conceptual paper, Paper IV uses insights from a Luhmannian evolutionary systems theory perspective to understand how VCR changes in the

firm's environment might require internal structural changes. In particular, Paper IV provides some arguments for a functional alignment of the corporate functions sustainable supply chain management (SSCM) and trade compliance (TC) to jointly take value chain responsibility. Simultaneously, Paper IV draws on insights of organizational path dependency to illustrate potential barriers of such an alignment.

Considering the integration of the research findings and managerial implications, this dissertation emphasizes that first, business practitioners are required to develop a more profound understanding of the ambivalent phenomenon of fragmented sustainability governance. Second, although companies are now equipped with an initial 'map' for the literature on fragmented sustainability governance, they still need to adapt general management tools to deal with governance fragmentation to their specific contextual settings and incorporate additional sources of knowledge and best practices beyond academia. Here, the dissertation emphasizes the importance of intra-firm knowledge exchange and a knowledge management system. Third, all four papers of this dissertation highlight the importance of external stakeholders for the firm's ability to take VCR along its value chain. Hence, this dissertation once again emphasizes the importance of taking stakeholders' expectations into account. Fourth, in light of considerable changes in the firm's environment, the firm will need to respond internally with changes in its functional and structural organization. Fifth, this dissertation provides some stimulus on linking the novel role of governance making to strategic considerations of the business firm, e.g. considering the strategic engagement in rule-finding discourses and rule-setting activities (e.g. via multi-stakeholder initiatives). Sixth, understanding value chain responsibility as a joint effort of value chain actors, this dissertation emphasizes the importance of partnerships between the business firm and its value chain partners and third parties to successfully take VCR. This could even entail the cooperation with competitors. Likewise, the importance of internal partnerships and cooperation of different corporate functions such as SSCM and TC is highlighted as a prerequisite to take VCR.

Overall, this dissertation provides distinct contributions to the scholarly community. This includes, but is not limited to, the wider scholarly discussion on the political role of the firm, business ethics studies, management studies, political science as well as systems theory, organizational studies, sustainable supply chain management scholarship and the literature on trade compliance. Naturally, given its focus on value chain responsibility, this dissertation also provides some assets to the greater academic field of corporate social responsibility, corporate responsibility and corporate sustainability. Having said that, this dissertation also provides four promising avenues for further research: First, considering our understanding of value chain responsibility in a complex environment, I suggest additional research on a) the drivers of sustainability governance fragmentation in other commodity sectors beyond the researched gold sector and b) the analysis of the interlinkages of companies with fragmented sustainability governance across different sectors and branches. Second, regarding the role of organizational and personal competences to thrive in an environment of fragmented governance and complex stakeholder expectations, I call for further research to explore the organizational and personal competences which are needed to fulfill the novel role of the firm as a governance maker. Likewise, more research is required to understand the needed competences to manage or cope with fragmented sustainability governance from the perspective of the firm as a governance taker. Third, regarding the availability of theoretical foundations, I encourage researchers to develop further theoretical insights regarding the phenomenon of fragmented sustainability governance and in particular the role of business firms in environments of fragmented governance. Fourth, considering the role of business management research, I invite scholars from the business and economics community to incorporate aspects of fragmented sustainability governance and its linkages to the business firm into their research agenda. Doing so might resemble a first step to provide guidance for corporate practitioners to successfully cope with fragmented governance.

7 Paper I: A Governance Puzzle to be Solved?

Paper I: A governance puzzle to be solved? A systematic literature review of fragmented sustainability governance (journal article published in a double-blind, peer reviewed scientific journal)

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A governance puzzle to be solved? A systematic literature review of fragmented sustainability governance

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Abstract

To address global sustainability challenges, adequate governance solutions are needed. Yet, sustainability governance is typically fragmented. This fragmentation poses a key challenge for practitioners and researchers and receives growing scholarly attention in different academic disciplines. So far, however, these research streams are missing a comprehensive mapping of the scholarly work on fragmented sustainability governance. While this lack of knowledge consolidation inhibits further academic learning, it also fails to provide corporate actors with practical guidance about the interplay between firms and fragmented sustainability governance. To address these gaps, we apply a mixed-method approach consisting of a systematic literature review and a citation network analysis to derive the following contributions. First, we elaborate on the composition and development of the research field on fragmented sustainability governance, including a citation network analysis. Second, we introduce a conceptual framework of overarching types of fragmentation regarding the ends, means, context, and outcomes of sustainability governance. Third, we introduce three types of managing fragmentation: coordination, convergence and integration, and meta governance. Fourth, we derive implications for future research regarding the role of business in fragmented sustainability governance.

Keywords Governance · Fragmentation · Business · Sustainability · Managing fragmentation · Systematic literature review · Political role of the firm · Citation network analysis

JEL classifications M14 · P48 · Q58 · D78 · F02 · F55 · F68

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1 Introduction

Today's global value chains give rise to severe sustainability challenges. In order to cope with such challenges, adequate governance for sustainability is needed. As traditional governance setters, governmental actors fall short of providing such governance, leading to the emergence of governance gaps (Abbott 2012a; Bäckstrand 2008; Biermann and Pattberg 2008; Smith and Fischlein 2010). As an answer to these governance gaps, companies and civil society organizations increasingly engage in setting governance (Fransen and Conzelmann 2015; Holzscheiter et al. 2016). However, the emergence and multitude of different governance setters have led to a fragmentation of governance for sustainability challenges.

For businesses, the phenomenon of fragmented sustainability governance is of potential significance in two complementary ways. On the one hand, companies are traditionally above all governance *takers*. As economic actors, they optimize their value creation activities within the given governance rules of the game (Pies et al. 2014; Sundaram and Inkpen 2004). In light of global value chains, however, these corporate activities no longer fall into one, say national, governance domain but span different fragmented governance domains. In fact, companies and their operations face fragmented sustainability governance characterized not only by diverse national and supra-national regulation but also by international norms and increasingly overwhelming numbers of private sustainability standards, which can result in conflictive governance guidance or missing resources and capabilities to deal with fragmented sustainability governance. On the other hand, companies increasingly operate as governance *makers*. As political actors, companies contribute to setting and enforcing the governance rules of the game (Eberlein et al. 2014; Pies et al. 2014; Scherer and Palazzo 2011; Scherer et al. 2014), e.g. by introducing private standards or by leading multi-stakeholder-initiatives (MSIs) as a form of collective private governance setting. In doing so, companies can contribute to a further fragmentation of sustainability governance in the sense of a growing number of governance actors that deal with different aspects of sustainability challenges. In short, business has an important dual role in the fragmentation of sustainability governance, as companies are both affected by and do affect fragmentation (Zeyen et al. 2016).

Given this dual role, companies face various questions, e.g. regarding their authority and capacity to fulfill this new role, considering how to choose from a variety of governance approaches or regarding the multifaceted expectations of stakeholders. In order to answer such questions, corporate actors benefit from a solid scientific knowledge base. However, in the case of fragmented sustainability governance, research provides so far limited guidance for corporate actors. In order to overcome this shortcoming, our study addresses the following three objectives.

1.1 Mapping the literature on fragmented sustainability governance

Our point of departure is that we know little about the composition of the scholarly literature on fragmented sustainability governance. Despite some important previous contributions (Isailovic et al. 2013; Pattberg et al. 2014) we still lack an overview

of the available academic knowledge on the fragmentation of sustainability governance, particularly regarding the role of companies in environments of fragmented sustainability governance. This raises questions regarding the development and characteristics of the interdisciplinary research on fragmented sustainability governance. To facilitate mutual learning between the existing knowledge bases, we need a thorough mapping of the research. We therefore propose two research questions regarding the composition of academic research on fragmented sustainability governance:

RQ1 What is the state of interdisciplinary research on fragmented sustainability governance, including its development over time, applied methodologies and occurring journals?

RQ2 What are the most influential publications on fragmented sustainability governance and to which research disciplines can they be assigned?

1.2 Providing a more nuanced understanding of the phenomenon of fragmented sustainability governance

Second, the fragmentation of sustainability governance is not a monolithic phenomenon but instead comes in many forms. In fact, fragmentation as such is not a clearly defined concept and can entail various manifestations, e.g. regarding a geographical fragmentation of sustainability governance practices, different means and ends of governance or different roles of involved actors. Our second objective is therefore to provide a more nuanced understanding of the phenomenon of fragmented sustainability governance considering its multifaceted nature. Given the complexity of sustainability governance approaches, decision makers in companies benefit from such a solid understanding of the different types of fragmentation that they might face in the real world. So far, however, the multifaceted nature of fragmented sustainability governance has only received little attention by scholars (Biermann et al. 2009). Yet, a conceptual clarification of the multi-dimensional nature of fragmentation can serve both practitioners and future research. We thus introduce our third research question:

RQ3 What types of fragmented sustainability governance can be derived from the scientific literature?

1.3 Identification of management approaches for fragmented sustainability governance

Third, there are diverse and competing ways to address and manage the fragmentation of sustainability governance. In line with other authors, we argue that the fragmentation of sustainability governance has to some degree always existed, is inevitable and will most likely prevail (Acharya 2016; Kalfagianni 2014; van Asselt and Zelli 2014). Against this background, companies as both governance takers and makers must deal with a prevailing landscape of fragmented sustainability governance. Yet, as fragmented sustainability governance comes in many forms, there is no silver bullet to manage it. In order to proactively cope with this continuing fragmentation, governance actors and particularly companies thus benefit from a conceptual understanding

of alternative approaches to manage fragmentation. Aspects of managing fragmentation have so far, however, received little scholarly attention (Gupta et al. 2016). To fill this gap, we introduce our fourth research question:

RQ4 What are approaches to manage the fragmentation of sustainability governance and how can these approaches be categorized?

To answer the introduced research questions, we use a mixed-method approach, entailing a systematic literature review (SLR) and a citation network analysis (CNA). In a first step, we use the SLR and the complementing CNA to thoroughly map the scientific research on fragmented sustainability governance in a systematic and reproducible manner, resulting in a descriptive analysis. By doing so, we amalgamate the existing knowledge on fragmented sustainability governance, show blind spots, point out avenues for mutual learning and further research, shed light on the citation interlinkages between publications on fragmented sustainability governance, and identify the most influential publications with their respective disciplinary background. This allows us to answer RQ1 and RQ2.

Simultaneously, the SLR provides us with a rich data set consisting of journal articles on fragmented sustainability governance. In a second step, we use this generated data set for an encompassing qualitative content analysis. Findings from this qualitative data analysis allow us to answer RQ3 and RQ4. In particular, the qualitative data analysis helps us to identify different management types to deal with fragmentation and to derive a conceptual framework of dimensions of sustainability governance fragmentation.

Our paper proceeds in six steps. We start by introducing the concept of fragmented sustainability governance. Then, we introduce the methodology of our SLR and CNA. In a third step, we map the literature in terms of development over time, occurring journals, methodologies, composition of the citation network as well as influential publications and their affiliation with research disciplines. Fourth, we employ a qualitative content analysis of the identified publications in order to develop a conceptual framework of the different dimensions of fragmentation that allows mapping fragmentation in terms of governance ends, means, context, and outcomes. Fifth, we use the qualitative data analysis to introduce three categories of managing fragmentation: coordination, convergence and integration, and meta governance. We close our study with some concluding remarks, limitations of our research and implications for future research regarding the role of business in fragmented sustainability governance.

2 The fragmentation of sustainability governance

Companies are increasingly supposed to take responsibility for negative social, environmental, and economic effects that are interlinked with their value creation activities. In today's jargon, such negative effects along corporate value chains are framed as sustainability challenges, referring to environmental, social, and economic issues (Elkington 1998). In order to allow companies to address such sustainability challenges, an adequate regulatory environment is a key prerequisite, which can be framed as governance. In line with previous studies (Pies et al. 2014), we refer to a definition

of governance by Williamson (2010, p. 674, emphasis in original) who describes it as the “means by which to infuse *order*, thereby to mitigate *conflict* and realize *mutual gain*”. Following this definition, sustainability governance can be understood as the means to provide a regulatory environment (*order*) that enables actors to mitigate or minimize sustainability challenges (*conflict*) and thus allow sustainable development pathways for all (*mutual gain*).

Yet, due to the increasing quantity and complexity of governance approaches for sustainability, the *fragmentation* of sustainability governance is becoming a key topic for academia and practitioners (Acharya 2016; Biermann et al. 2009; Held and Young 2013; van Asselt and Zelli 2014; Zelli and van Asselt 2013). Researchers have particularly focused on the causes of fragmentation (Abbott and Snidal 2010; Acharya 2016; Fransen 2015) and on the possible outcomes of fragmented sustainability governance (Loconto and Fouilleux 2014; Ponte and Daugbjerg 2015). The literature shows different perceptions of fragmentation, ranging “from a positive, affirmative assessment of fragmentation to a rather negative one” (Biermann et al. 2009, p. 14). In this review, we point out that fragmentation is ubiquitous, inevitable and has always been a key feature of governance (Kalfagianni 2014; van Asselt and Zelli 2014). We refrain from the negative connotation of fragmentation and aim to treat it as a “descriptive term” (Pattberg et al. 2014, p. 9f). For the purpose of our study, fragmentation can *inter alia* refer to (a) the plurality of governance mechanisms and actors, (b) different addressed issues and (c) different goals and normative values of governance actors.

As an important note, we want to highlight that the phenomenon of fragmentation is also discussed in a ‘general’ governance context, e.g. regarding fragmented governance of laws and regulations for customs, software codes, trade compliance standards and so forth. In other words, governance fragmentation is a *general* phenomenon and potential issue for involved actors, e.g. companies. From a corporate management perspective, sustainability governance and its potential fragmentation is a *specific* challenge, however, for at least three reasons: first, sustainability governance deals with the simultaneous consideration of multiple sustainability dimensions that are relevant for the business firm. Second, sustainability governance is characterized by the involvement of different stakeholder groups such as NGOs that can in turn be (come) governance makers. Third, corporate actors are increasingly held responsible to take care of sustainability topics along their corporate value chains, thus requiring adequate governance. Given these unique features of sustainability governance, we limit our analysis to the fragmentation of sustainability governance in particular. Nevertheless, we are open to the idea that our findings and conclusions might also apply in some regards to fragmented governance in general.

3 Methodology

We combine a systematic literature review with a citation network analysis to map and analyze the scholarly knowledge on fragmented sustainability governance. In a first step, we use a SLR to identify relevant publications on fragmented sustainability governance. The resulting dataset allows us to conduct further bibliometric analyses in the form of a citation network analysis.

Table 1 Topic-related and sector-related search terms

Topic-related search terms	Sector-related search terms
“sustainab* governance” ; “global governance”; “environment* governance”; “private governance”; “governance architect*”; “new governance”; “old governance”; “transnational governance”; “labour governance”; “labor governance”; “social governance”; “governance for social”; “societal governance”; “governance for societal”; “human right* governance”; “governance for human right*”	“single”; “gap”, “void”; “dual”; “heterog*”; “homog*”; “ambi*”; “align*”; “fragment*”; “harmoni*”; “de-harmoni*”; “deharmoni*”; “consolidat*”; “patchwork”; “complex*”; “unif*”; “central*”; “decentral*”; “multi*”; “converg*”; “congestion”; “poly*”; “mono*”; “hegemony”; “innovat*”; “coordinat*”; “co-ordinat*”; “collaborat*”; “cooperat*”; “diverg*”; “diversi*”; “rival*”; “compet*”; “standard*”; “hybrid”; “modular”

3.1 Methodology of the systematic literature review

In line with previous SLRs, we follow a structured multistage process (Denyer and Tranfield 2009; Shabir and Rosmini 2016) to systematically identify, analyze, and synthesize the knowledge on fragmented sustainability governance. This multistage process consists of a planning phase, a scoping study, the selection of search parameters, the selection of publications as well as the data analysis and the synthesis of the publications (Denyer and Tranfield 2009; Garkisch et al. 2017; Pilbeam et al. 2012, p. 360; Shabir and Rosmini 2016). Our SLR builds on six scientific databases (Denyer and Tranfield 2009; Seuring and Müller 2008), ranges from 2002 to 2017 (Hohenstein et al. 2014) and includes 134 peer-reviewed journal publications (hereafter called data sample).¹ We included a variety of databases to ensure the representation of different research streams (Denyer and Tranfield 2009; Hohenstein et al. 2014): ABI/INFORM Collection, EBSCO Host (including Business Source Complete and EconLit), HeinOnline, Science Direct, and Scopus. In addition, we used Google scholar. We conducted a quantitative and qualitative analysis of the identified publications.

3.1.1 Keywords and search strings

In line with Maier et al. (2016), we organized our search terms into topic-related terms and sector-related terms. While the expressions ‘topic’ and ‘sector’ might be misleading, they practically refer to the context of sustainability governance (topic: different expressions to specify governance) and to the phenomenon of fragmentation (sector: different terms to describe the fragmentation of governance). Table 1 shows the 16 topic-related terms and the 36 sector-related search terms.²

This dichotomy facilitated the structuring of our search terms into 16 search strings. In order to receive our search strings, we combined each topic-related term with a sequence of the sector-related terms. Although we chose the keywords with great

¹ A list of the 134 analyzed publications in the SLR is available as Electronic supplementary material.

² Following the valuable suggestion of a reviewer, we included additional keywords in our search process that particularly cover the social dimension of sustainability.

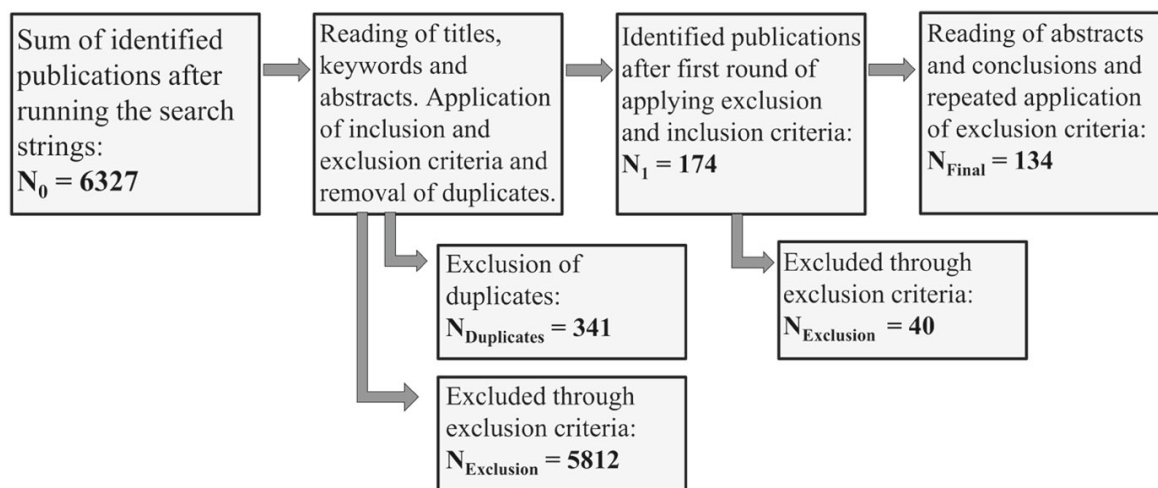


Fig. 1 Overview of the data collection process, including numbers of publications per search step

care, there are still abundant more keywords that describe the realm of sustainability (like climate, biodiversity, fairness, etc.). As it is not feasible to include all possible keywords in the search process, we decided to search wide and then use strict inclusion/exclusion criteria in order to judge whether or not a publication relates to sustainability governance and its fragmentation.

3.1.2 Inclusion and exclusion criteria

We apply inclusion and exclusion criteria for the systematic selection of publications (Denyer and Tranfield 2009; Shabir and Rosmini 2016). In the search process, the query of each search string was applied to the entire text.³ In case this search exceeded 200 results, the search was further refined to the title, abstract, and keywords. If this step still resulted in over 200 results, the search was limited to “title only” (Candel 2014). The inclusion and exclusion criteria were applied to the title of the publications, the keywords, and the abstract. In cases where the application of inclusion and exclusion criteria was straightforward, the systematic selection of publications was conducted by the first author. Critical cases during the systematic selection were discussed by the two authors until agreement was reached. Our final sample of papers all fulfill our inclusion criteria (Shabir and Rosmini 2016, p. 83). The usage of strict inclusion and exclusion criteria serves to secure a high quality of our SLR (Shabir and Rosmini 2016). Figure 1 shows the respective number of publications per step. Our final sample of publications consists of 134 peer-reviewed journal publications.

As the focus of our study lies on the available scientific knowledge, we decided to narrow down our search using the following criteria (Maier et al. 2016; Seuring and Müller 2008). We only include peer-reviewed scientific publications in academic journals in English. Only publications with a clear link to sustainability topics (of social, ecological and/or economic nature) and the affiliated fragmented governance were selected. In this selection step, we referred to our previously introduced understanding of sustainability governance and fragmentation.

³ All steps and results of the search process were recorded in a data extraction sheet and are available upon request.

3.1.3 Descriptive and qualitative data analysis

First, we conducted a descriptive analysis of the identified publications. This descriptive analysis allows us to map the field of research on fragmented sustainability governance and was conducted with a data extraction sheet⁴ (Denyer and Tranfield 2009; Shabir and Rosmini 2016). Additionally, we used the 134 identified publications as a data set for a qualitative content analysis. In more detail, we used the software MAXQDA as an instrument to structure, code, and analyze the publications (Macpherson and Holt 2007; Pittaway and Cope 2007). As guiding questions for the qualitative inductive coding, we searched for different dimensions of fragmented sustainability governance and approaches to manage fragmentation. Furthermore, we searched inter alia for the objects of fragmentation, reasons and drivers of fragmentation, definitions and understandings of fragmentation as well as research questions and further research suggestions in the data. To this end, we carefully read in full all identified publications and applied an open, inductive coding approach. In a second step, we reorganized, merged, and structured the codes. This resulted in a total of 316 different codes and over 7.500 coded segments in all 134 publications. Where applicable, we provide the absolute number of coded segments and respective publications in the following format: number of coded segments/number of documents. The qualitative data analysis supported the development of our conceptual contributions. In greater detail, the conceptual framework on overarching types and dimensions of sustainability governance fragmentation and the overview of management types which we introduce in Sect. 5, mirror prominent codes and code families.

3.2 Methodology of the citation network analysis

In order to shed light on the composition of the research on fragmented sustainability governance, we applied further bibliometric analyses in the form of a citation network analysis, including the identification of influential publications in our data sample. Bibliometric analyses and citation networks resemble an excellent supplement to SLRs as they allow to visualize the interlinkages of scholarly articles (Aliyev et al. 2018; Colicchia and Strozzi 2012; Fahimnia et al. 2015; Kim et al. 2018; Wetzstein et al. 2018). We assigned a unique ID to each of the 134 publications in our data sample and constructed a matrix of citation interlinkages between the publications. Using the software Gephi, we visualized the citation network, consisting of nodes (representing publications) and edges (representing citations to articles within our data sample). Building on this, we identified the 20 publications with the highest citation scores (in terms of number of citations within the sample) and their respective disciplinary background. Here, the underlying assumption is that research contributions with a high citation score are considered to be most influential within the network of publications. In more detail, we identified the 20 most often cited journal articles within our data sample based on the absolute number of citations (out-degree) and visualized them with a dual circle layout in Gephi (Fig. 4). Furthermore, we categorized these 20 most influential publications into scientific research disciplines. In order to

⁴ The data extraction sheet and the list of codes are available to the reader upon request.

do so in a rigorous manner, the two authors individually allocated the 20 articles to research disciplines (Table 2)⁵ and discussed potential discrepancies until agreement was reached.

4 Descriptive findings

In order to achieve our first objective, we use the descriptive part of the SLR and the CNA to provide a mapping of the literature. By doing so, we answer our first two research questions: *What is the state of interdisciplinary research on fragmented sustainability governance, including its development over time, applied methodologies and occurring journals? What are the most influential publications on fragmented sustainability governance and to which research disciplines can they be assigned?* In the following, we highlight the development of research over time and the employed methodologies, the involvement of different journals, the citation network as well as the most influential publications and their disciplinary affiliation.

4.1 Development of publications and research methodologies over time

Our findings indicate that the topic of fragmented sustainability governance receives a steady increase regarding the absolute number of publications per year (Fig. 2). This clear trend indicates that academia is increasingly paying attention to this phenomenon. From 2008 till 2012, we witness an increase in publications and the appearance of a corner stone paper in 2009 by Biermann and colleagues (Biermann et al. 2009) which drew attention to the phenomenon of fragmented governance. The last third of the time period (2013–2017) can be characterized by a strong increase of publications. We witness a take-off in this phase, with double digit numbers of publications per year starting in 2013.

In addition, we elaborate on the development of employed research methodologies in our data sample over time. Therefore, we assigned the identified publications to five methodological categories: qualitative, quantitative, theoretical and conceptual, literature review, and mixed methods (Winter and Knemeyer 2013), and analyzed their utilization over time (see Fig. 2). The majority of publications are of qualitative nature (66 out of 134). Of these 66 qualitative publications, 31 use a case study approach. Theoretical and conceptual publications follow with 52 studies. In contrast, literature reviews (six studies) and quantitative studies (five studies) are rather exceptional. Overall, the distribution of utilized research methodologies is rather unbalanced.

When looking at the distribution of methodological approaches over time (Fig. 2), we witness several observations that mirror the general debate on bibliometric research (Keathley et al. 2013). The beginning of research on fragmented sustainability governance is characterized by qualitative and theoretical contributions, whereas other methods (quantitative, mixed methods and literature reviews) are slowly starting to

⁵ Thanks to the valuable suggestion of a reviewer, we measured the inter-coder reliability. The individual allocation of publications to research disciplines lead to an agreement of 90% and a Krippendorff's Alpha (nominal) of 0.477 (Krippendorff 2011).

Table 2 Overview of the 20 most cited publications

References	Title	Out-degree	Journal	Discipline
Biermann et al. (2009)	The Fragmentation of Global Governance Architectures: A Framework for Analysis	25	<i>Global Environmental Politics</i>	<i>Political science</i>
Andonova et al. (2009)	Transnational Climate Governance	15	<i>Global Environmental Politics</i>	<i>Political science</i>
Abbott (2012a, b)	The transnational regime complex for climate change	14	<i>Environment and Planning C: Government and Policy</i>	<i>Political science</i>
Abbott and Snidal (2009)	Strengthening International Regulation Through Transnational New Governance: Overcoming the Orchestration Deficit	14	<i>Vanderbilt Journal of Transnational Law</i>	<i>Political science</i>
Overdevest and Zeitlin (2014)	Assembling an experimentalist regime: Transnational governance interactions in the forest sector	12	<i>Regulation and Governance</i>	<i>Political science</i>
Pattberg (2005)	The institutionalization of private governance: How business and nonprofit organizations agree on transnational rules	12	<i>Governance</i>	<i>Political science</i>
Hale and Roger (2014)	Orchestration and transnational climate governance	11	<i>Review of International Organizations</i>	<i>Political science</i>
Abbott and Snidal (2010)	International regulation without international government: Improving IO performance through orchestration	11	<i>Review of International Organizations</i>	<i>Political science</i>

Table 2 continued

References	Title	Out-degree	Journal	Discipline
Biermann (2007)	“Earth system governance” as a crosscutting theme of global change research	10	<i>Global Environmental Change</i>	<i>Environmental studies</i>
Fransen (2011)	Why Do Private Governance Organizations Not Converge? A Political-Institutional Analysis of Transnational Labor Standards Regulation	10	<i>Governance</i>	<i>Political science</i>
Pattberg (2006)	Private governance and the South: Lessons from global forest politics	9	<i>Third World Quarterly</i>	<i>Political science</i>
Zelli and van Asselt (2013)	The Institutional Fragmentation of Global Environmental Governance: Causes, Consequences, and Responses	8	<i>Global Environmental Politics</i>	<i>Political science</i>
Meidinger (2008)	Competitive Supra-Governmental Regulation: How could it be democratic?	8	<i>Chicago Journal of International Law</i>	<i>Law</i>
Pattberg and Stripple (2008)	Beyond the public and private divide: Remapping transnational climate governance in the 21st century	7	<i>International Environmental Agreements: Politics, Law and Economics</i>	<i>Political science</i>
Biermann and Pattberg (2008)	Global Environmental Governance: Taking Stock, Moving Forward	7	<i>Annual Review of Environment and Resources</i>	<i>Environmental studies</i>

Table 2 continued

References	Title	Out-degree	Journal	Discipline
Reinecke et al. (2012)	The Emergence of a Standards Market: Multiplicity of Sustainability Standards in the Global Coffee Industry	7	<i>Organization Studies</i>	<i>Business and Economics</i>
Gulbrandsen (2014)	Dynamic governance interactions: Evolutionary effects of state responses to non-state certification programs	7	<i>Regulation and Governance</i>	<i>Political science</i>
Schouten and Glasbergen (2011)	Creating legitimacy in global private governance: The case of the Roundtable on Sustainable Palm Oil	7	<i>Ecological Economics</i>	<i>Business and Economics</i>
Schleifer (2013)	Orchestrating sustainability: The case of European Union biofuel governance	6	<i>Regulation and Governance</i>	<i>Political science</i>
Auld (2014)	Confronting trade-offs and interactive effects in the choice of policy focus: Specialized versus comprehensive private governance	6	<i>Regulation and Governance</i>	<i>Political science</i>

appear since 2008 and 2009. With an exception in 2009, quantitative studies only occur in the last 3 years (2015–2017) of the analyzed period. Mixed methods occur primarily in the last 4 years (2014–2017) and literature reviews primarily since 2013.

The great majority of publications use a qualitative approach with single or multiple case studies representing the lion's share. The single case studies focus primarily on private sustainability governance setters such as the Forest Stewardship Council (FSC) (Pattberg 2005), the Marine Stewardship Council (MSC), roundtables (Marin-Burgos

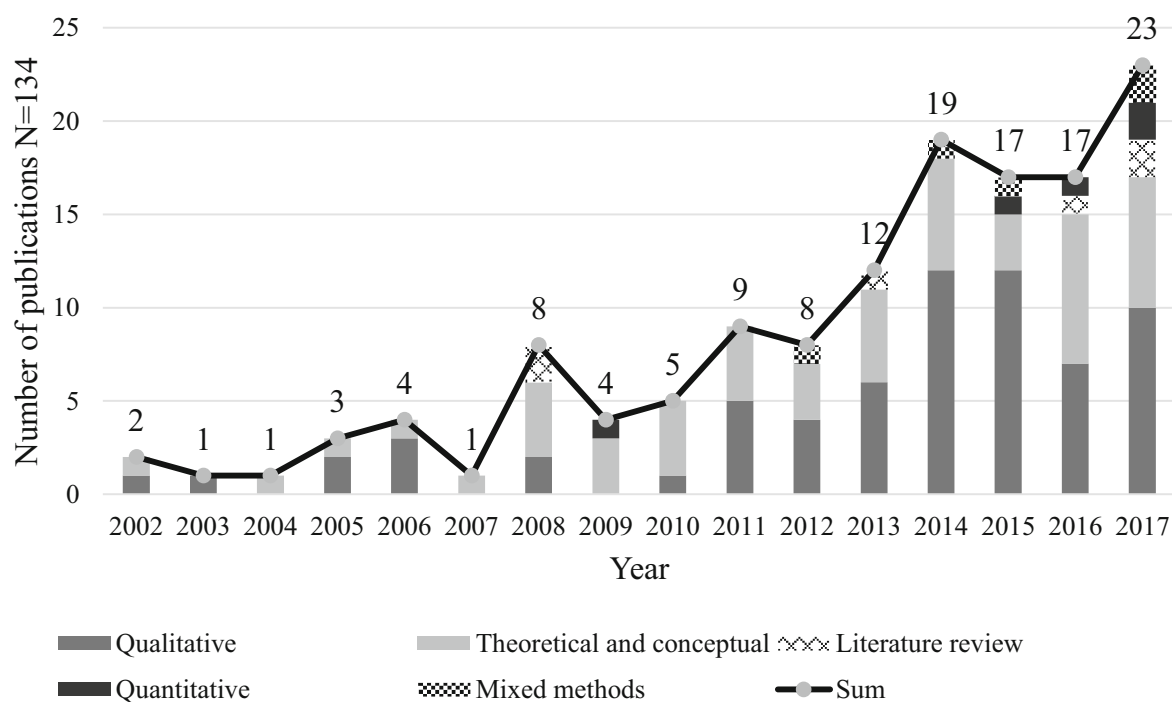


Fig. 2 Distribution of publications per year for the analyzed time period 2002–2017 and distribution of research methodologies over time

et al. 2015; Schouten and Glasbergen 2011), meta governance setters like ISEAL (Loconto and Fouilleux 2014) or governance mechanisms like REDD+. Comparative or multiple case studies highlight e.g. different meta governance setters (Fransen 2015), the cross-sector analysis of governance actors (Fransen and Conzelmann 2015) or multiple actors within a single sector such as coffee or fishery (Manning and Reinecke 2016). While qualitative research provides rich insights, it has shortcomings regarding the generalization of its findings. Therefore, we encourage researchers to provide more quantitative studies on fragmented sustainability governance, particularly regarding comparative and cross-sector research.

Most theoretical and conceptual publications introduce some sort of typology, framework, or conceptual model. This entails inter alia a conceptual framework on the certification effectiveness of sustainability governance schemes (de Man and German 2017), a governance triangle which classifies governance setters (Abbott and Snidal 2010), or a framework on meta governance (Fransen 2015). A noteworthy publication in this regard is the study by Biermann et al. (2009) which introduces a typology of different types of fragmentation of governance architectures.

4.2 Occurrence in journals

The total of 134 identified publications stem from 81 different journals which cover a wide variety of different scientific fields, including fields such as political science and governance, different sub-disciplines of law, international relations, social science, environmental studies, as well as to a lesser degree business and economic journals. This result shows that the literature on fragmented sustainability governance is multi-disciplinary and takes place in different fields and journals. Many of the occurring

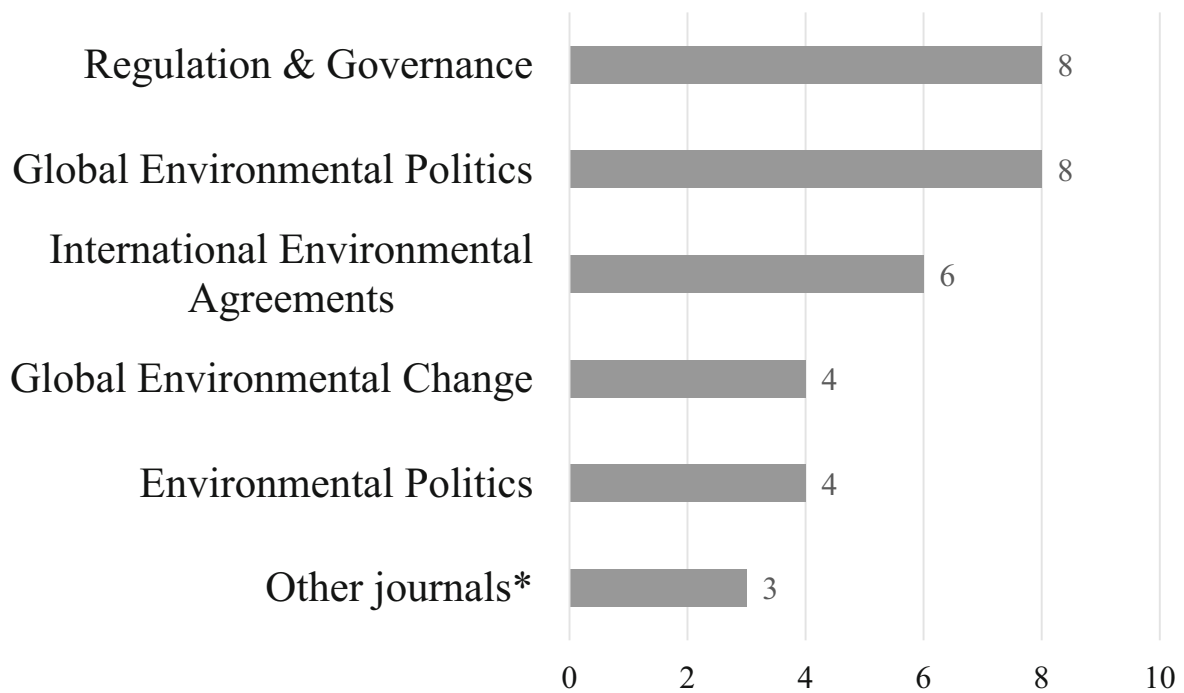


Fig. 3 Overview of leading journals. *Other journals with three occurrences each: Business and Politics; Global Governance; Governance: An International Journal of Policy, Administration, and Institutions; Ecological Economics; Forest Policy and Economics; Policy and Society; Global Policy

journals have an inter- or multidisciplinary character. This makes sense as the phenomenon of fragmented sustainability governance is a cross-disciplinary topic that can and should be addressed from different research viewpoints. At the same time, the fact that the research is taking place in many journals with different disciplinary backgrounds makes it difficult to enter the debate and could potentially impede mutual learning between involved scholars and journal communities, thus making it more difficult to develop a concise research agenda. Figure 3 displays the most frequent journals in our data sample.

We could identify three journals with at least six publications (Regulation and Governance, Global Environmental Politics, and International Environmental Agreements) and nine journals with at least three publications. Yet, no journal hosts more than eight publications (less than 6% of the total 134 publications) which might indicate that the overall scientific discourse on fragmented sustainability governance might lack a core journal or just possess a rather weak core journal. Furthermore, we found 55 journals with only one publication each. This highlights that the fragmentation of sustainability governance is a (potential) topic in various journal communities.

4.3 Most often cited articles based on citation analysis

Based on our CNA, we found that 25 out of 134 publications have no citation inter-linkages to other publications in our sample which means that they neither cite nor are cited by any other article of the sample. After removing these 25 publications from our citation data, we received a network consisting of 109 nodes (publications) and

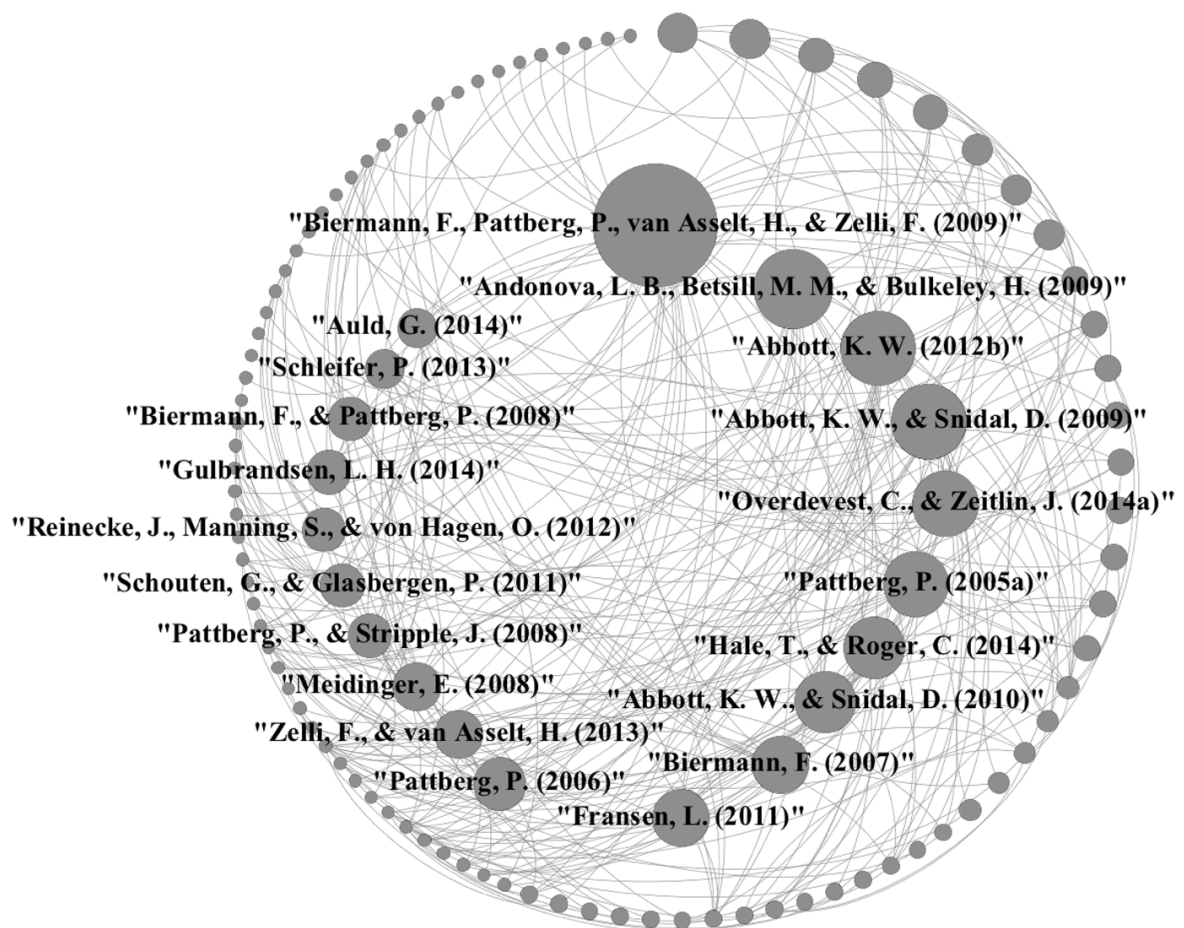


Fig. 4 Citation network of journal articles on fragmented sustainability governance depicted with a dual circle layout. The 20 most often cited publications within the network (based on out-degree) are plotted in the inner circle. The remaining 89 articles are located on the outer circle in sequence of their citation score (clockwise)

297 edges (citation interlinkages). Figure 4 visualizes the citation network in a dual circle layout with the most cited publications plotted in the inner circle.

The following table shows the top 20 most influential publications in our network, including their respective number of citations within the network (out-degree), journal occurrence, and affiliated research discipline.

Interestingly, the ten most influential publications are responsible for 45% of all citation interlinkages within the network (134 out of 297 citation interlinkages), with the leading publication by Biermann and colleagues (2009) representing 8% of all citations (25 out of 297 citation interlinkages). Furthermore, this leading publication is cited by 25 out of 109 publications in our network, which stresses the importance of this single paper for the research on fragmented sustainability governance.

4.3.1 Contributions of research disciplines

Considering all 134 publications, we found that a variety of different scientific disciplines provide contributions to the scholarly knowledge on fragmented sustainability governance. This includes, but is not limited to, political science, law, environmental studies, business and economics, inter- or multidisciplinary studies, sociology and

social studies, natural science, and geography. In further detail, we allocated the 20 most influential publications to distinct research disciplines. This revealed some interesting findings: although various scientific disciplines are contributing to the scholarly knowledge on fragmented sustainability governance, we see that the 20 most influential publications are clearly dominated by political science contributions. Considering the different disciplinary backgrounds of the 20 most influential publications in the citation network, we found that at least 15 publications have a strong affiliation with the realm of *political science*, two can be assigned to *environmental studies*, two to *business and economics* research and one publication to the discipline *law*.

4.3.2 Contributions from political science

Publications in the realm of political science can be considered a key driver of the academic debate on fragmented sustainability governance. One explanation might be that the term fragmentation originally stems from the realm of political science and social sciences and was then “exported” to other fields such as legal studies (Blanchard 2017, p. 329). The field of political science can thus be regarded as the cradle of the academic discourse on fragmented sustainability governance.

In more detail, the identified publications with a political science background have a distinct level of analysis and perspective in their research approaches. Publications in this category primarily focus on overarching (and sometimes abstract) constructs of sustainability governance, such as (hybrid) regimes, governance architectures, transnational sustainability governance arenas, international relations and institutions as core actors (e.g. Abbott 2012b; Overdevest and Zeitlin 2014; Zelli and van Asselt 2013). With this perspective in mind, contributions that stem from political science focus less on the concrete practices of individual actors (such as companies) but often contribute to understanding the complex phenomenon of sustainability governance arrangements from a more abstract bird’s eye perspective. When doing so, the involved scholars incorporate concepts of legitimacy, authority, democracy, hierarchy, power, participation, and agency beyond the state into their research questions and research endeavor (e.g. Fransen 2011; Pattberg and Stripple 2008; Schleifer 2013).

Considering the topic focus of the publications with a background in political science, we found that climate change and global warming (5 out of 15 publications), forestry (5), fishery (2), and environmental topics in general (2) are addressed. These topics have in common that they (a) traditionally have strong ties to state responsibility and (b) have a rather transnational perspective. Regarding the fragmentation of sustainability governance, the identified publications from political science elaborate on different types and degrees of fragmentation, governmental responses to fragmentation, pros and cons of fragmentation as well as managing fragmentation (primarily through orchestration by the state or international organizations) (e.g. Abbott and Snidal 2009; Hale and Roger 2014).

Regarding the role of companies in light of fragmented sustainability governance, political science publications highlight the emergence of private governance beyond or complementary to the state and the shifting responsibilities and roles in this process. In more detail, the publications shed light on the interplay of public and private gover-

nance makers and necessary instruments to steer this interplay, as well as conflictive aspects of public and private governance (Auld 2014).

Although the studies with a political science background deliver important contributions to understand abstract aspects of fragmented sustainability governance, they provide us with limited support regarding the concrete role of companies in environments of fragmented sustainability governance. Publications from political science apply a level of analysis (regimes, governance architectures) that insufficiently incorporates the perspective of companies when shaping sustainability governance and/or dealing with fragmentation in their value chains and business operations. Furthermore, political science contributions often look at companies from the outside, e.g. when assessing the interplay of companies, states, and NGOs in jointly setting governance, yet, they are missing an internal perspective of the firm. The addressed topics and system boundaries of political science publications (climate change, transnational fishery regulations) are certainly of importance for corporate actors, yet, they do not incorporate a value chain perspective at an industry level. One exception for this is the paper by Fransen (2011) with a focus on labor standards in the textile industry.

Furthermore, approaches to deal with fragmentation are mainly limited to orchestration by governmental bodies or international organizations and do not incorporate companies and their means and capabilities to manage fragmentation. In a nutshell, contributions from political science help us to understand overarching and abstract questions of fragmented sustainability governance, yet they are less suitable to answer more practical questions linked to the business firm in environments of fragmented sustainability governance.

4.3.3 Contributions from environmental studies

Publications from the realm of environmental studies primarily address the relationship and interlinkages between earth/nature and humanity/societal systems. This relationship is in constant change and framed as global environmental change or earth system governance (Biermann 2007). Naturally, publications with this background focus on topics such as climate change (2 publications), global commons and resources, pollution and environmental challenges in general. We found that contributions with an environmental studies background show strong interlinkages to political science, as they e.g. highlight governance architectures, the role of the state in setting environmental policies, as well as questions of legitimacy, effectiveness and democracy (Biermann 2007; Biermann and Pattberg 2008). We found that environmental aspects of sustainability governance are often addressed by both scholars from environmental studies and political science alike. More precisely, many political science publications cover questions of fragmented environmental governance (such as the governance of climate change). As a consequence, issues arising from fragmented environmental governance are covered by the literature streams of political science and of environmental studies alike. As global environmental governance entails the shift from state-centered authority to new private governance arrangements, it represents an important field of research for scholars from political science as well as environmental studies scholars.

We found rather weak linkages to the role of companies in publications with an environmental studies background. In more detail, companies are often just mentioned

as being/becoming new governance makers that can shape environmental governance. Furthermore, forms of cooperation between private and non-private governance actors are discussed to some degree in environmental studies.

4.3.4 Contributions from business and economics research

The fragmentation of sustainability governance plays an important role for firms, as companies are (a) affected by (fragmented) governance and (b) increasingly involved in setting private sustainability governance. This is e.g. the case with regard to the participation of companies in MSIs which set private governance or regarding the changing role of companies from mere rule takers to rule makers with regard to sustainability challenges along their value chains.

While the fragmentation of sustainability governance plays an important role in the empirical reality of companies, our findings suggest that the business and economics literature only insufficiently covers questions related to this topic. According to Paavola (2016), aspects of environmental governance have little visibility for scholars from the field of business and economics. Going one step further, we argue that not only sustainability governance but more importantly also its fragmentation has only received little attention by business and economics scholars. This is surprising because companies can experience the fragmentation of sustainability governance as a real-life challenge when organizing global value chain activities. As fragmented sustainability governance, however, is affected by and does affect the empirical reality of companies, industry associations, NGOs, and other actors, future research will benefit from more dialogue between political science and other disciplines such as management and economics.

In the 20 most cited publications, we identified two publications with a background in business and economics, namely the work by Reinecke et al. (2012) and Schouten and Glasbergen (2011). Both studies emphasize the importance of sustainability standards as novel governance approaches to address sustainability challenges along corporate value chains and global commodity chains. Furthermore, both publications highlight how companies are intertwined with such new forms of multi-stakeholder governance, e.g. as actively contributing to governance (maker) and/or being affected by multiple sustainability standards (taker) (Reinecke et al. 2012; Schouten and Glasbergen 2011). By doing so, the authors contribute to addressing relevant questions of companies that deal with fragmented sustainability governance and are likewise involved in the creation of multiple sustainability governance approaches. We find particularly interesting that the study by Reinecke et al. (2012) applies a market formation research perspective to assess the dynamics in a market of sustainability standards for coffee, thus combining theoretical insights from economic studies and governance theory.

Moreover, regardless of the respective research discipline, in total, 54 papers (out of 134) assess the interplay of companies and fragmented sustainability governance, including 15 papers with a focus on companies as governance takers and 31 on governance makers, respectively. Interestingly, the non-traditional and somewhat exceptional role of companies as governance makers thus receives much *more* attention than the traditional and much more widespread role of companies as governance takers.

While practically all companies that operate global value chains experience sustainability governance fragmentation as governance takers, only a small (but important) group of companies engages in active standard setting etc., thus being governance makers. What is more, however, the *dual* role of companies as takers and makers of sustainability governance received only scarce attention in the identified research, as merely five publications explicitly highlight both roles of companies as governance makers and takers (Abbott 2012a; Fransen 2015; Kalfagianni 2014; Potoski and Prakash 2004; Thauer 2015).

4.3.5 Contributions from law and legal studies

Research in the field of law and legal studies traditionally focuses on questions of hard law and state-centered authority. Law research has long followed the tradition of a “Westphalian vision of state power through hierarchy” (Holley 2016, p. 25). The fragmentation of sustainability governance, which is particularly linked to soft law and private governance beyond the state, has therefore not been in the spotlight of law research (as it is seemingly opposed to the traditional focus on hard law and state authority). A shift in the law literature began in the 1980s towards dealing with new forms of private governance as complementary, conflictive, supplementary, or parallel approaches to traditional hard law and state centered authority. As a consequence, the law literature has expanded its research focus to questions regarding the interplay between hard law and new private sustainability governance approaches. A main question for legal scholars is how to combine new soft governance with traditional hard law (Holley 2016, p. 26). The complementarity of public and private governance represents a growing body of legal literature in this regard (Bartley 2011, p. 523).

In the 20 most cited publications, we identified one publication with a strong law focus which addresses the competition of private regulatory programs and its implications for democratic legitimacy, power and authority as well as accountability (Meidinger 2008). Furthermore, the role and response of the state to competing governance programs is elaborated. Regarding the role of companies, the identified paper by Meidinger (2008) stresses the incorporation of business actors in regulatory programs and to some extent includes a supply chain perspective.

5 Qualitative analysis

We now focus on the multifaceted nature of fragmented sustainability governance and on approaches to manage it. As indicated before, sustainability governance cannot always be clearly separated from ‘general governance’. Therefore, some of the following findings and thoughts might also apply to fragmented governance in general.

In the following sections, we assess different types of sustainability governance fragmentation and potential management practices to address them. We build our argument on the results of our qualitative content analysis, using the data set generated by our SLR and analyzed with the help of MAXQDA. In a first step, we argue for a more nuanced understanding of fragmented sustainability governance and introduce a conceptual framework that distinguishes different dimensions of fragmentation. In

order to achieve this, we particularly focus on dimensions and manifestations of fragmentation in our data sample and group the appropriate findings into *ends*, *means*, *context*, *outcomes*, and *actors*. While the precise allocation of individual code segments to the category of *ends* and *actors* dimensions was too ambiguous, as they were simply too many and often multi-coded segments, we could directly allocate coded segments of our qualitative data analysis to the dimensions of *means*, *context* and *outcomes*. Note, again, that these results will be given as total number of coded segments/number of relevant documents (e.g. 67/24). In a second step, we provide an overview of three overarching types of managing fragmentation. Here, we focus on concrete management approaches to deal with fragmented sustainability governance that occur in our data sample and the respective codes. In both steps, we first present our findings followed then by a discussion.

5.1 Types of fragmented sustainability governance

A key challenge of fragmented sustainability governance is that it comes in many forms. Therefore, involved actors, particularly companies, would benefit from a conceptual understanding of different types of fragmentation that they might face. Despite existing approaches to cluster fragmentation (Biermann et al. 2009; Pattberg et al. 2014), we are still missing a comprehensive synthesis that aggregates the different types of fragmentation discussed in the literature. Using the content analysis of our SRL data, we address our third research question (*What types of fragmented sustainability governance can be derived from the scientific literature?*) to develop a conceptual framework of the different types and dimensions of fragmentation.

In Fig. 5, we introduce our conceptual framework of four different types of fragmentation, each including additional dimensions. Overall, our framework captures the multifaceted nature of sustainability governance and shows qualitative variations with regard to the nature of fragmentation. In more detail, our framework is structured according to the *ends* (*what?*), *means* (*how?*), *context* (*where?*) and potential *outcomes* (*with what effects?*) of sustainability governance. In all these regards, fragmentation can occur. Moreover, different governance *actors* (*who?*) such as companies, civil society organizations, or governments are involved in all respective components of the framework. As an important note, we found that the fragmentation of sustainability governance *can* take many forms, which does not mean that it always takes *all* forms. On the contrary, we suggest that the fragmentation of sustainability governance can resemble a configuration of different components of our framework. In other words, we found in the literature how this configuration *could* look like, but do not claim that our framework necessarily covers all possible configurations of fragmentation.

In the following, we elaborate in greater detail on the respective dimensions of fragmentation.

5.1.1 Ends (what is governed?)

Governance serves to solve specific problems and, in our study, to address diverse sustainability issues. Here, the specific sustainability issues can differ, thus leading to

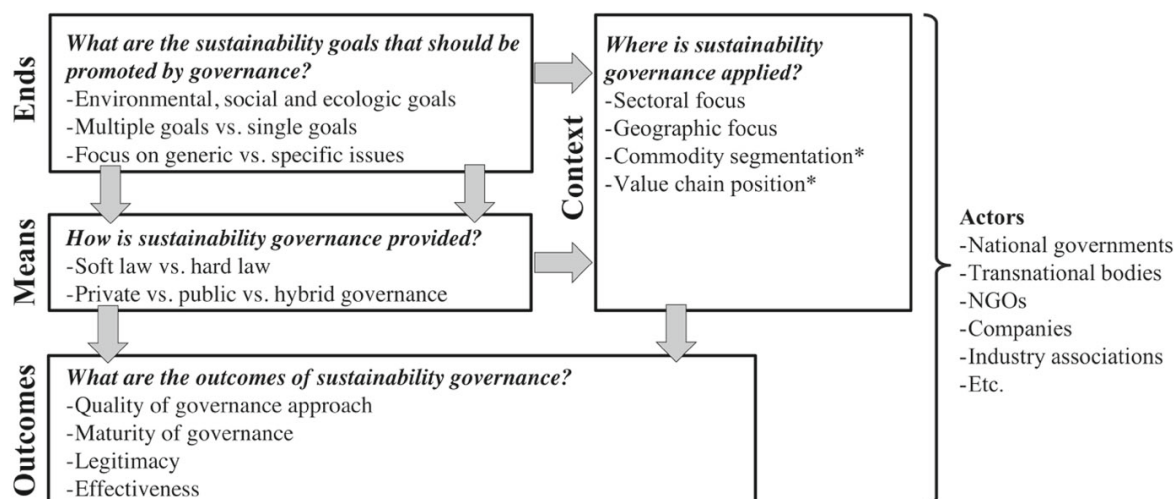


Fig. 5 Conceptual framework of overarching types and dimensions of sustainability governance fragmentation. The asterisk indicates that the dimensions are not derived from the literature but are instead introduced in our discussion

fragmented contents. With regard to sustainability, the goals can differ according to *environmental, social, and economic dimensions* (Elkington 1998). Yet, the notion of sustainability can be contested amongst governance setters and lead to diverse and even competing objectives of governance (Humrich 2013; Manning and Reinecke 2016). As a consequence, multiple understandings of sustainability and different priorities with regard to the three dimensions can lead to conflictive goals and trade-offs. How governance actors set their objectives for governance is overall closely linked to their underlying normative attributes (Renard and Loconto 2012).

The often fragmented ends of sustainability governance can be differentiated with regard to adhering to *single or multiple goals* and considering *generic* (social challenges) versus *specific* (child labor) issues that are incorporated in the goals (Acharya 2016; Biermann et al. 2009; Roberts 2011).

5.1.2 Means (how is governance provided?)

Sustainability goals can be achieved by a variety of governance means. Here, the fragmentation of sustainability governance results not from fragmented issues but from the fragmented use of different instruments. A primary distinction can be made regarding *soft* (72 coded segments/36 documents) or *hard law approaches* (89/48) to set governance. Soft law can also be framed as “private regulation [...] or transnational new governance” (Bartley 2011, p. 518), whereas hard law primarily consists of governmental laws to govern sustainability issues. Closely linked to the distinction between hard and soft law is the differentiation between *private* (85/41), *public* (108/42), and *hybrid* (72/24) approaches for governance (Abbott 2012a; Acharya 2016; Ewert and Maggetti 2016; Gutiérrez and Morgan 2017). Public governance refers to nation states and governmental bodies as governance setters, while private governance is shaped e.g. by civil society organizations and corporations. Hybrid governance can entail various combinations of private and public actors such as public private partnerships (PPPs). As a key feature, hybrid governance brings together different actor groups

and different governance modes or logics in order to create more than ‘the sum of its individual parts’. Through hybrid governance, a plurality of actors can work together and bring in their respective competencies and resources. By doing so, hybrid governance can potentially lead to greater legitimacy and accountability and reduce the complexity of fragmented governance (Rana and Chhatre 2017).

5.1.3 Context (where is governance provided?)

In addition, fragmentation can also refer to a fragmentation of contexts in which sustainability governance occurs. Contextual settings are a key factor that shape the fragmentation and multiplicity of governance for sustainability challenges. Our qualitative analysis identified sectoral and geographic aspects that considerably impact the manifestation of fragmented sustainability governance. In our data set, the sectoral focus highlights the industrial or commodity sector where governance approaches are applied. *Sectoral fragmentation* (421/97) primarily refers to industrial sectors such as forestry (138/33), fishery (42/15), agriculture (26/11) (coffee, soy, palm oil), or textiles (11/4). Sectors have specific characteristics that can influence the outcome of governance actions (Fransen and Conzelmann 2015). Considering the sectors that are addressed by sustainability governance, we found that forestry and fishery are covered by most studies with 33 and 15 publications respectively. More than a third of all publications thus circles around these two sectors. Regarding forestry, research mainly focuses on FSC as a private governance setter (Bloomfield and Schleifer 2017; Cashore et al. 2003) and the REDD + mechanism (Gallemore 2017; Gupta et al. 2016; Long 2011). Research on fishery almost exclusively highlights the MSC as a governance setter (Foley and Havice 2016; Gutiérrez and Morgan 2017).

With regard to *geographic aspects* (13/7), the fragmentation of sustainability governance can take place in different country contexts or refer to the difference between universally applicable governance approaches and national, regional, or local approaches (Acharya 2016, p. 453). Geographical fragmentation can also refer to the divergence of governance setters located in Western countries and the actual area of effect of governance in countries in the Global South (Schouten and Bitzer 2015). Geographic challenges can arise with regard to including stakeholders from different areas of the world in joint governance approaches such as MSIs (Kalfagianni and Pattberg 2013b). It can also entail the emergence of new sustainability governance approaches for particular characteristics of geographic areas, e.g. regarding “territorial eco-certification initiatives” (Foley and Havice 2016, p. 24). For companies with complex value chains, both sectoral and geographical fragmentation pose a challenge as their organization needs to deal with a multiplicity of different governance fragments.

5.1.4 Outcomes (with what effect?)

The sustainability governance landscape can also be fragmented with regard to the effects and outcomes achieved. More specifically, our qualitative data analysis identified three ways in which sustainability governance outcomes can be fragmented, i.e. quality and effectiveness, legitimacy, and maturity. *Quality* (28/9) and *effectiveness*

(52/23) refer to the ambitions and performance of a given governance approach with regard to accomplishing its sustainability objectives, e.g. regarding the impact of different private governance approaches on sustainable fishery (Kalfagianni and Pattberg 2013a). Moreover, with regard to the outcome ambition, this can refer to different levels of strictness of sustainability governance approaches, e.g. regarding entry level sustainability standards versus high standards (Reinecke et al. 2012). With regard to effectiveness, governance approaches can considerably vary and lead to different degrees of effectively fulfilling the defined sustainability goals (Gulbrandsen 2005; Kalfagianni and Pattberg 2013a; Michaelowa and Michaelowa 2017). While effectiveness focuses above all on the governance output, *legitimacy* (126/35) is a criterion that also depends on governance inputs such as transparency or the wide inclusion of stakeholders. Legitimacy is a key component of overall governance research with ample scholarly work from political science that highlights that the governance landscape can be fragmented with regard to the legitimacy achieved by different approaches (Kalfagianni and Pattberg 2014; Marin-Burgos et al. 2015). Finally, *maturity* (8/7) describes the development status of a (sustainability) governance approach. While some governance approaches might still be in a phase of emergence, consolidation and development, others might have experienced several years of (successful) performance (Mayer and Gereffi 2010). Maturity can also refer to the number of newly emerging governance actors and to the mainstreaming or extension of existing governance approaches (Smith and Fischlein 2010).

By introducing this conceptual framework, we aim to contribute to the scholarly debate on different forms and types of fragmented sustainability governance. So far, extant research has mainly focused on rather abstract and theoretical conceptualization of fragmentation, e.g. regarding different forms of fragmented governance architectures (Biermann et al. 2009) or institutions (Zelli and van Asselt 2013). We believe that our framework offers more concrete and comprehensive guidance for governance actors, particularly companies, that deal with the multifaceted nature of fragmentation.

5.1.5 Brief reflection on the conceptual framework

As a key contribution, our study looks at the fragmentation of sustainability governance from a corporate perspective. In the context of sustainability governance, corporations are the ones who need to integrate different sustainability issues/topics across different contents, contexts and scopes, thus referring to multiple types and dimensions of fragmentation.

Considering the outcomes of fragmentation, the literature so far focuses more on questions of legitimacy than on quality and effectiveness. Regarding the contextual factors, the geographic fragmentation only plays a minor role and aspects of value chain position and commodity segmentation are not covered. These are relevant blind spots from a corporate practitioner perspective, as companies might be more interested in sustainability governance quality and effectiveness than legitimacy aspects. Furthermore, companies operate in value chain logics embedded in spatial environments of fragmented sustainability governance which is so far not addressed in further detail by studies in our sample. Adding to this, it is also noteworthy that some dimensions of the fragmentation of sustainability governance are so far not covered by the literature

at all. For example, companies operate in different commodity segments (e.g. small scale vs. large scale mining) and deal with different value chain scopes (e.g. single supplier vs. full supply chain) when addressing sustainability challenges. This could imply further dimensions of sustainability governance fragmentation which were so far not covered in our sample.

5.2 Introducing an initial typology of managing fragmentation

After providing a more nuanced conceptualization of fragmentation, we now focus on various types to manage fragmented sustainability governance. In line with previous studies, we argue that the fragmentation of governance has to some degree always existed (Acharya 2016), is inevitable and will most likely prevail (Acharya 2016; van Asselt and Zelli 2014). Furthermore, we emphasize that the fragmentation of sustainability governance is per se neither negative nor positive. Instead, it can have ambivalent consequences depending on the contextual factors (Termeer et al. 2011). Yet, in order to proactively cope with fragmentation, it is helpful to be aware of available approaches to do so.

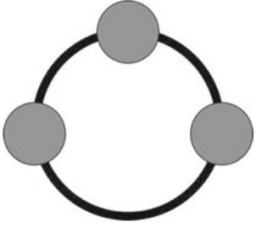
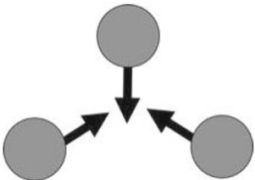
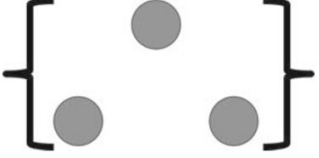
Against this background, our qualitative analysis of the SLR data set identified an emerging body of research on different ways to manage fragmentation (Gupta et al. 2016; Hale and Roger 2014; van Asselt and Zelli 2014). Managing fragmentation in this context does not necessarily mean to overcome fragmentation but to execute approaches that allow existing with fragmentation in a beneficial way (Isailovic et al. 2013; Scott 2011). Yet, based on its multidimensional nature, there are various possible ways how to manage fragmentation.

Before introducing an initial management typology, we need to make an important distinction. Similar to the distinction of governance takers and makers, we need to clarify whether managing fragmentation refers to the governance makers (purposefully steering the implementation of governance) or the takers (dealing with a multiplicity of governance approaches). This distinction is crucial, as the management of fragmentation is naturally linked to the respective goals of the involved actors. In the case of governance makers, this could entail to make governance more effective and legitimate (e.g. to advance sustainability objectives). Governance takers in contrast, such as companies, might primarily be interested in achieving their organizational goals (e.g. to minimize costs).

Against this background, we answer our fourth research question: *What are approaches to manage the fragmentation of sustainability governance and how can these approaches be categorized?* To this end, we used the content analysis of our SLR to identify distinct management approaches. With regard to management approaches for governance makers, our content analysis identified diverse practices to deal with fragmentation. Upon closer inspection, these practices can be subsumed under three overarching categories, including several subordinated approaches to address fragmented sustainability governance (Table 3).

In the following, we elaborate in greater detail on the derived management types and their components.

Table 3 Management types for fragmentation

Management type	Description	Components
<p>I. Coordination</p> 	<p>Coordination aims to purposefully steer the interaction of different governance approaches. While the fragments of governance remain, coordination aims to improve the interplay between independent fragments. The relationships between the individual fragments are altered. By providing agency in the background, coordination helps to bridge different governance actors and their actions</p>	<p>Orchestration Agenda setting Bridging Interplay management Complementary governance</p>
<p>II. Convergence and integration</p> 	<p>Convergence and integration refer to the purposeful altering (a) of the contents of governance approaches, (b) of structures and organizations and (c) of governance actors. The development takes place on the level of the fragments and actors. In the process, the single fragments are altered, merged or integrated</p>	<p>Convergence Integration Alignment</p>
<p>III. Meta governance</p> 	<p>Meta governance provides the governance for fragmented governance. As the “second-order governance” (Holscheiter et al. 2016, p. 9), it aims to provide “some degree of coordinated governance” (Meuleman 2008, p. 68) by managing the plurality of governance approaches for a given issue or field. It aims to achieve “core criteria and overarching principles” (Reinecke et al. 2012, p. 792) with regard to the content of governance, while allowing a diversity of fragments</p>	<p>Multiple components, e.g. including the establishment of best practices</p>

5.2.1 Coordination

As the term expresses, *coordination* approaches accept the individual governance fragments as given but aim to improve their interplay. Coordination thus does not alter the fragments but their relationships. Within the management category of coordination, our SLR identified the subordinate concepts of orchestration (231 coded segments/47 documents), agenda setting (9/7), bridging (11/1), interplay management (10/1), and complementary governance (32/20). Of those publications in our data sample that address the question of managing fragmentation, the majority focuses on coordination practices, particularly emphasizing the concept of *orchestration*: “Orchestration can be defined as when a governance actor (the orchestrator) enlists and supports third-party actors (the intermediary) to address the target indirectly in pursuit of shared governance objectives” (Pegram 2015, p. 627). Orchestration is mainly used by Inter-governmental Organizations (IGOs) and governmental actors and allows these actors to benefit from the resources and competencies of the involved intermediaries (mainly NGOs and other private governance actors) (Abbott 2012a, p. 562; Schleifer 2013). It can serve as a catalyst and leverage the limited resources of the orchestrator by adding additional resources from the intermediaries. Examples of orchestrators are e.g. UNEP, other UN agencies, the OECD, or the World Bank (Abbott and Snidal 2009; Biermann 2002; Lister et al. 2015). Note that the idea of orchestration as a management approach is a prominent topic in the realm of political science. Therefore, it is no surprise that we could hardly find any research on the role of companies as potential orchestrators—despite the fact that focal firms in value chain networks might have the ability and interest to do so. One noteworthy exception in this regard is the study by Gordon and Johnson (2017) who point out the emerging role of private transnational corporations as potential governance orchestrators.

Agenda setting can provide guidance for involved intermediaries and help to align and define common goals. By doing so, it can “steer activities in [a] desired direction” (Abbott and Bernstein 2015, p. 230). It requires the formation of a ‘coalition of the willing’ which should include relevant stakeholder groups and interests (Gallemore 2017). Governments are key players to either lead or support agenda setting via direct management or “the shadow of the hierarchy” (Gulbrandsen 2014, p. 76). Yet, agenda setting also takes place within sustainability governance approaches, particularly within MSIs and in the context of meta governance (Gallemore 2017; Renard and Loconto 2012; Schouten and Bitzer 2015). Companies are suited to provide agenda setting, particularly in the context of MSIs. Yet, our SLR did not find any substantial research on companies as agenda setters and which resources and competences they need to fulfill this task.

In the case of *bridging*, governance actors can bring together different actors through governance entities such as networks or partnerships. Bridging can serve as a catalyst function to leverage the individual governance approaches of previously unconnected actors. Special bridging organizations can fulfill this function, e.g. the REDD + multi-stakeholder approach (Gupta et al. 2016). Bridging could potentially be important in the context of industry associations that might support companies as governance makers.

Considering *interplay management*, we can differentiate two types: “Regulatory interplay management” uses regulatory power to steer the interplay between sustainability governance actors, while “enabling interplay management” uses soft power, e.g. in the form of capacity building (Auld 2014; Oberthür 2009, p. 377). Corporate actors could particularly benefit from enabling interplay management in order to become effective and legitimate governance makers.

Complementary governance aims to transform a fragmented (in the sense of conflictive and duplicative) form of sustainability governance into a complementary state of beneficially co-existing fragments. In this context, fragments comply with different expectations and address different issues. Like a puzzle, different fragments purposefully complement each other to form a coherent picture (Kinderman 2016; Widerberg and Pattberg 2015). Potentially, complementary governance can “produce better governance outcomes than single instrument or single-party approaches” (Holley 2016, p. 45). From the perspective of companies as governance takers, complementary sustainability governance is a key step in order to diminish negative consequences of fragmented sustainability governance, as it helps to avoid duplicates and reduce conflictive governance.

5.2.2 Convergence and integration

While coordination approaches take the different fragments as given and try to structure the space between them, convergence and integration is more about altering the fragments themselves in order to allow a more coherent interplay. More specifically, *convergence* (65 coded segments/26 documents) describes the purposeful approximation of the content of sustainability governance approaches, particularly regarding standards, laws and policies (Bernstein and Cashore 2012; Perez 2011; Renard and Loconto 2012; Wood 2016). It can entail the merging of previously separated governance mechanisms. In our data set, convergence as a management approach is particularly important for standards as governance mechanisms. Through policy adjustments, benchmarking and the “commitment to best practices” (Fransen 2011, p. 361), sustainability governance standards can potentially develop towards “higher stringency and strictness” (Kalfagianni and Pattberg 2013b, p. 131; Nadvi 2008). Convergence in this regard can also be termed as “upward harmonization of best practices” (Pedro et al. 2017, p. 163).

Integrative governance (9/4) can refer to different entities, particularly regarding organizational and policy integration as well as the integration of governance actors and their respective interests (Humrich 2013). With regard to governance policies, integration can refer (a) to cascading international norms and policies into private governance on the ground and (b) to integrating private governance principles into “national political systems or international agreements” (Pattberg 2006, p. 589f). Considering governance actors, integration can refer to the merging of organizations, e.g. regarding the merging of UTZ and Rainforest Alliance, two major sustainability governance setters for agricultural products (UTZ 2018).

Alignment practices (e.g. Lister et al. 2015; Meidinger 2008) (4/4) can refer (a) to approximating the content of different sustainability governance approaches (particularly standards and laws) which allows e.g. the usage of cross-recognition agreements

and (b) to combining previously unconnected governance approaches. This second alignment perspective requires the creation of compatible linkages between different governance approaches.

5.2.3 Meta governance

Meta governance (134 coded segments/18 documents) provides governance for fragmented sustainability governance and receives medium attention in our data sample (Derkx and Glasbergen 2014; Meuleman and Niestroy 2015; Renard and Loconto 2012; Roberts 2011). While meta governance was traditionally executed by governmental bodies, we witness that private governance actors such as NGOs and companies increasingly engage as meta governance setters (Derkx and Glasbergen 2014). As a text book example, the ISEAL Alliance (71/17) provides meta governance for sustainability standards and receives the lion's share of scholarly attention (Fransen 2015, p. 297). As a non-profit organization, ISEAL serves as a meta governance setter with a particular focus on its member organizations. By doing so, ISEAL offers the "standards for standard setting". With the words of Bernstein and van der Ven, "ISEAL governs the governors" (2017, p. 547). Meta governance can entail management approaches of the other identified management types. Despite the great variety of instruments and actors to execute meta governance, research has almost exclusively focused on ISEAL. Only recently, scholars began to focus on other (potential) meta governance setters. Besides ISEAL, new meta governance setters are emerging which could potentially lead to "rival meta-governance initiatives" (Fransen 2015, p. 293). Competing meta governance setters could lead to greater coordination and harmonization issues instead of resolving them (Fransen 2015, p. 293). Again, the role of companies as potential meta governance actors has hardly been addressed by academia (as shown by zero overlaps of the codes *meta governance* and *role of companies*). Little is known to what extent companies have the capabilities, legitimacy, and incentives to serve as meta governance setters.

In summary, the existing literature has a strong focus on NGOs, IGOs, and governmental bodies as governance setters and their respective possibilities to manage sustainability governance fragmentation. Although companies increasingly operate as governance makers, there is scarce research on how companies as governance setters can manage fragmented sustainability governance. In this vein, we also lack research on which management approaches are best suited for the different actor groups (companies, NGOs, governments, etc.). In addition, we only found two studies that address the aspect of necessary competences to manage fragmentation (Dorsch and Flachsland 2017; Ewert and Maggetti 2016).

6 Concluding remarks, further research and limitations

We used a systematic literature review and a citation network analysis to shed light on the phenomenon of fragmented sustainability governance. In particular, we focused on the dual role of companies as potential governance makers and takers. Our study assesses the phenomenon of fragmented sustainability governance and its particulari-

ties. Sustainability governance is unique for at least three reasons: it deals with multiple sustainability dimensions, involves various stakeholder groups as governance makers and takers, and follows a system, life cycle and/or value chain perspective. Naturally, fragmented sustainability governance has interlinkages and overlaps to (fragmented) governance in general. Based on our methodological approach to focus on publications that cover aspects of fragmented sustainability governance, we are not able to empirically derive conclusions about the differences and similarities of fragmented sustainability governance and fragmented governance in general.⁶ Certainly, doing so represents a promising avenue for further research.

However, using the particular field of sustainability governance, we were able to illuminate specific characteristics of fragmented sustainability governance (e.g. regarding the overarching types and dimensions of fragmented sustainability governance and management approaches to address this). This allows us to introduce some tentative assumptions about the differences and similarities between sustainability governance and governance in general/in other areas (e.g. taxation, customs and transnational laws). Regarding our conceptual framework of types and dimensions of fragmented sustainability governance, we assume that the variety of ends (multiple sustainability dimensions), the means (soft law vs./and hard law) as well as the importance of different stakeholder groups (actors) are quite specific for the field of sustainability governance. In contrast, the outcome (quality, effectiveness) and context (sectoral focus, geographic focus) might show similarities to other fields of fragmented governance such as global tax or security governance.

Furthermore, regarding the identified management types for fragmentation, we propose that some components of our framework (such as the overarching management types of *coordination*, *convergence and integration*, and *meta governance*) could also be applied to fragmentation in a general governance context. However, some features such as orchestration (e.g. for climate governance) and complementary governance of public and private actors (e.g. manifesting in MSIs) are rather specific for sustainability governance. Against this background, we invite researchers to further expand, develop, and criticize our conceptual framework and identified types of managing fragmentation.

In the descriptive findings section, we provided a mapping of the research on fragmented sustainability governance in order to accomplish our first objective. A key finding is that the literature is gaining momentum since the year 2013, spreads across different journals, and shows contributions from various scientific disciplines. Yet, when looking at the most influential (in terms of number of citations) publications in our data sample, contributions with a background in political science clearly stand out. Although political science publications provide us with valuable insights regarding the phenomenon of fragmented sustainability governance, they are so far of limited help in assessing the multifaceted role of companies as governance makers and takers in environments of fragmented sustainability governance because they often stay on a rather abstract level of analysis, focus on transnational environmental topics decoupled from corporate value chains, and employ an outside view on the business firm. In other

⁶ We want to thank the anonymous reviewer for pointing out the interesting question which findings and conclusions are specific about fragmented sustainability governance compared to governance in general.

words, there seems to be an interesting potential in closing the gap between system-oriented perspectives such as in political science and the internal actor-perspective of companies that management studies could help to illuminate.

With regard to the state of literature, there is a dominance of publications with a political science background. At the same time, our citation network and bibliometric analyses show that other scientific disciplines deliver valuable contributions and often refer to political science publications as leading studies on fragmented sustainability governance.

To further assess the composition of the research, we encourage scholars to conduct cluster analyses of the research on fragmented sustainability governance in order to find out communities of research publications. This could e.g. be executed with further network analyses and modularity calculations (Blondel et al. 2008; Kim et al. 2018; Lambiotte et al. 2009; Wetzstein 2017). Furthermore, future research could assess the maturity of this research field by using established indicators for the maturity of a research field (Edmondson and McManus 2007; Keathley et al. 2013).

Regarding the interplay of companies and fragmented sustainability governance, we found that this field of research is still offering ample room for research, particular in the business and economics community and considering e.g. the dual role of companies in environments of fragmented sustainability governance. We therefore encourage (a) researchers from all disciplines to put a stronger emphasis on the interlinkages between companies and fragmented sustainability governance and (b) more researchers from the business and economics realm to join the debate.

We provided a more nuanced understanding of the phenomenon of fragmented sustainability governance. Building upon the literature, we developed a conceptual framework of different types of fragmentation, structured according to the *ends, means, context*, and potential *outcomes* of sustainability governance. Overall, our conceptual framework calls for two avenues for further research. First, we suggest to elaborate on how the fragmentation of sustainability governance might differ in different contexts and how strong (or weak) the different dimensions of fragmentation might manifest. Second, further research could assess potential patterns of dimensions of fragmentation, e.g. considering the (potential) relationship of hard law/soft law (means) and geographic focus (context). Potential patterns of sustainability governance fragmentation could for example be identified with a cluster analysis.

Considering the role of companies in landscapes of fragmented sustainability governance, we encourage researchers to further elaborate on different types of fragmentation regarding the interplay of companies and fragmentation. We therefore call for further research on the diversity and interplay of sustainability goals and the variety of contextual factors that shape fragmented sustainability governance. In particular, research should further assess the sectoral and value chain factors as main aspects that impact fragmentation.

Considering the distinction of governance makers and takers, we encourage researchers to further highlight the different roles and contributions of actor groups in different parts of our conceptual model. By advancing research in this regard, one could derive a more comprehensive understanding of the potential contributions of different actor groups, particularly companies, when making or taking governance.

We derived from the literature three types of managing fragmented sustainability governance: coordination, convergence and integration, and meta governance. Overall, the scholarly debate particularly focuses on governance *makers* (states, NGOs, IGOs) and their respective means to manage fragmentation. Less attention is drawn on how governance *takers*, particularly companies, can handle the multiplicity of sustainability governance. We therefore encourage further research to generate useful guidance on how companies as governance takers can manage the multiplicity of sustainability governance approaches they deal with in daily business.

Considering the role of companies as governance makers, we need to know which competences are needed to fulfill the task of (a) setting governance and (b) managing the fragmentation of sustainability governance in a proactive manner. We therefore encourage researchers to further highlight the needed competences of different actors with regard to managing fragmentation.

Although we chose the keywords and search strings with great diligence, we might have missed relevant publications which do not include our keywords in their abstract or title. Considering the qualitative data analysis of the SLR data set, we cannot say anything about the representativeness of our findings, e.g. considering the representation and configuration of different dimensions of fragmentation of sustainability governance. Naturally, our findings only mirror the published scholarly knowledge. However, they do not necessarily resemble real-life manifestations of fragmented sustainability governance. In this vein, we encourage researchers to apply our conceptual contributions on types of fragmentation and forms of managing fragmentation to empirical cases. Nevertheless, we are confident that our SLR provides useful starting points for mutual learning and exchange between researchers from different disciplines.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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8 Paper II: Private Sustainability Governance in the Making

Paper II: Private sustainability governance in the making – a case study analysis of the fragmentation of sustainability governance for the gold sector

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Private sustainability governance in the making – A case study analysis of the fragmentation of sustainability governance for the gold sector

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ABSTRACT

Governance is needed to address sustainability challenges along global value chains. Yet, the multiplicity or fragmentation of public and private sustainability governance resembles a potential hurdle for coping with sustainability challenges. This fragmentation is also intriguing from a research perspective, as little is known about the drivers of governance fragmentation in specific commodity sectors. This study assesses the fragmentation of sustainability governance in the global gold sector. Four general factors for fragmentation are derived from the literature: contextual factors, intra- and inter-organizational factors as well as scope of governance. A comprehensive case study, including a qualitative analysis of 26 in-depth interviews with experts in the gold sector, is used to investigate these general factors in the case of gold and to derive gold-specific factors for fragmentation. The five key findings are that, first, specific industry characteristics of the gold sector create actor-specific governance needs that lead to a multiplicity of governance schemes. Second, key governance references exist in the case of gold, but leave room for interpretation, thus encouraging a multiplicity of governance. Third, intra-organizational factors considerably impact the fragmentation of governance for gold, regarding different governance initiators and members, organizational logics, missions and 'business models' and the framing of sustainability. Fourth, the scope of governance strongly explains fragmentation in the gold sector. Fifth, competition between governance makers for gold provides only weak explanations for the resulting fragmentation. A conceptual framework is introduced that encapsulates general factors of fragmentation from the literature and gold-specific factors from the empirical findings. It serves to refine, enrich and display factors of fragmentation in their interaction in the gold sector. Insights from this study expand the scholarly knowledge on fragmented sustainability governance and provide a starting point for further cross-case and comparative studies of fragmented sustainability governance.

1. Introduction

Global sustainability governance increasingly depends on actors beyond governments (Bernstein, 2011; Bitzer, 2012; Börzel and Risse, 2010) and is characterized by the interplay of different actors that provide governance to tackle sustainability challenges along global value chains. Regarding the shift from primarily government-based governance to the provision of rules by a variety of actors, which can be framed with the notion of private governance, one phenomenon is of great importance: In the last 30 years, a great diversity of new private governance approaches emerged to address sustainability challenges in various commodity sectors (Mena and Palazzo, 2012; Riisgaard, 2011; Schouten and Glasbergen, 2011). This is framed as a fragmentation of governance (Fransen and Conzelmann, 2015; Gupta et al., 2016; Held and Young, 2013; Pattberg et al., 2014). This fragmentation of

sustainability governance occurs in several industrial sectors like coffee, agriculture and textiles (Fransen, 2011; Giovannucci and Ponte, 2005; Schouten and Bitzer, 2015; Turcotte et al., 2014). Increasingly, private sustainability governance approaches are also introduced to the minerals and metals industries, resulting in an increasing number and diversity of governance approaches (Kickler et al., 2018; Marques, 2016; Mori Junior, Sturman and Imbrogiano, 2017; Young et al., 2014). In the case of the gold sector, various sustainability governance schemes for gold emerged in the last two decades to tackle sustainability challenges related to the extraction, processing and trading of gold, thus eventually leading to a landscape of fragmented sustainability governance (see Fig. 1). This fragmentation of (private) sustainability governance can cause challenges for practitioners that need to cope with a variety of governance approaches when operating in their commodity sector and addressing sustainability challenges (Bitzer

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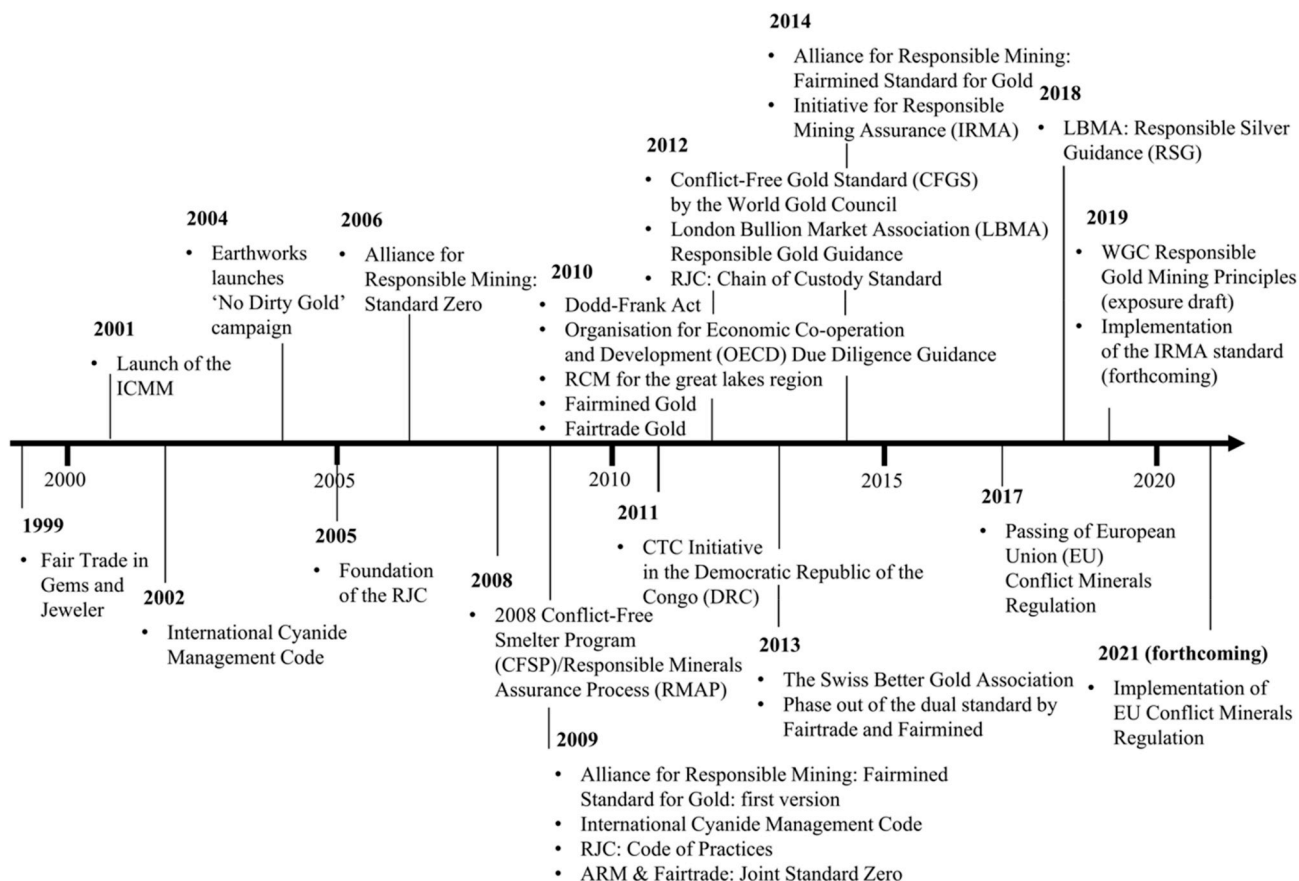


Fig. 1. Timeline of the development of sustainability governance for gold (own illustration).

et al., 2008; Held and Young, 2013; Hospes, van der Valk and van der Mheen-Sluijter, 2012; Smith and Fischlein, 2010; Zelli and van Asselt, 2013). Furthermore, the phenomenon of fragmented sustainability governance is also intriguing from a research perspective. While there is abundant literature on gold-related sustainability challenges (Andrews, 2016; Childs, 2008; Mudd, 2007), we lack sufficient knowledge on the emergence of (fragmented) governance to address them (Marques, 2016; Mori Junior et al., 2017; Vogel, 2018; Young, 2018; Young et al., 2014). Against this background, the overall research question (RQ₀) of this paper is: *How can we explain the emergence of the fragmented sustainability governance for gold?*

In order to answer this question, I use three sub-questions: RQ₁: *What is fragmented sustainability governance?* RQ₂: *Which types of general factors can explain the emergence of fragmented sustainability governance?* In a first step, I review the literature on fragmented sustainability governance and provide a brief overview of the phenomenon of fragmented sustainability governance. When doing so, I include scholarly knowledge from a variety of research disciplines, primarily referring to political science, environmental studies, law and legal studies as well as business and economics research. Building on this, I derive mechanisms from the literature that explain the fragmentation of sustainability governance and assign them to four overarching categories.

Using a comprehensive case study, including 26 in-depth semi-structured interviews with experts in the field, these general factors from the literature are applied to the case of governance for gold, in order to answer the third sub-question (RQ₃): *How do general factors for fragmentation and gold-specific factors influence the fragmentation of governance for gold?* This step serves to a) investigate the identified general factors of governance fragmentation in the case of gold and b) identify gold-specific factors that explain governance fragmentation in this sector. By doing so, this study contributes to the scholarly knowledge

on different factors that help explain the emergence of fragmented sustainability governance. Furthermore, I aim to refine the literature on fragmented sustainability governance and contextualize it in the case of the gold sector, thus advancing the scholarly knowledge.

As a distinct contribution, this study provides an encompassing analysis of sustainability schemes for gold. Furthermore, it provides some thoughts on investigating gold-specific factors for governance fragmentation in commodity sectors beyond the gold sector. To address this, a conceptual framework is introduced in the discussion section that entails both general factors as well as gold-specific factors for fragmentation. This framework aims to stimulate the academic discussion on factors that explain the fragmentation of governance, it serves to identify areas of further research and particularly encourages researchers to apply the conceptual framework as a conceptual lens to study further commodity sectors. The study concludes with some final remarks, limitations and suggestions for further research.

2. General overview of the fragmentation of sustainability governance

Adequate governance approaches are necessary to cope with global sustainability challenges (Newig et al., 2007; Voß and Bornemann, 2011). Building on the governance definition by Williamson (2010), sustainability governance aims to create and implement governance instruments and a regulatory environment that allows different actor groups to prevent or reduce sustainability challenges. By doing so, sustainability governance can foster pathways of sustainable development (see Meuleman and Niestroy, 2015). Considering the increasing complexity of global value chain operations and the affiliated sustainability challenges, governments as traditional *public* governance actors struggle to deliver sustainability governance approaches (Abbott,

Table 1
Comparison of overarching categories and factors that explain governance fragmentation (own depiction).

Category	I. Contextual	II. Intra-organizational	III. Inter-organizational	IV. Scope of governance
Key features	- Regulatory environment - Industry characteristics	- Composition of governance maker - Mission, framing and objectives	- Competition vs. cooperation	- Content and target audience - Means and communication

2012a; Bäckstrand, 2008; Bernstein and Cashore, 2007; Biermann and Pattberg, 2008; Bush et al., 2015; Chkanikova and Lehner, 2015; Kalfagianni, 2014; Smith and Fischlein, 2010). Against this background, *private* governance actors such as civil society organizations, nongovernmental organizations (NGOs) and business firms gained importance as new providers of sustainability governance (Abbott and Snidal, 2009; Foley, 2017; Fransen and Conzelmann, 2015; Grabs, 2018; Holzscheiter et al., 2016; Johnstone, 2019; Kalfagianni, 2014; Schouten and Bitzer, 2015). Following this line of thought, private governance refers to non-governmental governance actors (e.g. companies) that create, implement and enforce (voluntary) governance approaches to provide a regulatory environment (Kalfagianni, 2014; Perez, 2011; Scherer and Palazzo, 2011). Given this change in governance, sustainability governance is increasingly characterized by co-existing, complementary or cooperating public and private governance actors and their respective formal and informal governance instruments (Bartley, 2007; Boström et al., 2015; de Bakker et al., 2019; Derkx and Glasbergen, 2014; Eberlein et al., 2014; Grabs, 2018; Johnstone, 2019; Marx, 2017; Reinecke et al., 2012). Due to the emergence of private governance actors, a variety of new, predominantly voluntary, governance instruments such as sustainability standards and labels, codes of conduct or sustainability certifications were introduced (Abbott and Snidal, 2009; Auld, 2014; Derkx and Glasbergen, 2014; Kalfagianni, 2014; Reinecke et al., 2012). In this study, these diverse governance approaches are summarized with the term sustainability scheme (Kickler and Franken, 2017; MacGregor et al., 2017; Mori Junior and Ali, 2017).

Furthermore, I apply the distinction between governance *makers* and *takers* in the context of sustainability governance actors (see Jinnah, 2017; Schultze, 2003). Governance makers are creating and implementing sustainability governance through respective instruments such as sustainability schemes. Considering private sustainability governance, new actors such as companies and civil society organizations can actively fulfill the role of governance makers besides governments (Pies et al., 2014; Scherer et al., 2014). On the contrary, actors that are primarily affected by sustainability governance and its regulatory instruments, can be considered as governance takers. In the context of sustainability challenges, companies represent a major group of governance takers (Pies et al., 2014; Sundaram and Inkpen, 2004). The focus of this study lies on governance makers in the gold sector and their respective sustainability schemes and organizations.

The resulting quantity and variety of new public and private sustainability governance approaches for a single commodity sector results in a so-called fragmentation of governance (Biermann et al., 2009; Zelli and van Asselt, 2013). This fragmentation of sustainability governance has become a prominent topic in various scientific disciplines, including, but not limited to, political science (e.g. Abbott, 2012b; Fransen, 2011; Overdevest and Zeitlin, 2014; Schleifer, 2013; Zelli and van Asselt, 2013), law and legal studies (e.g. Bartley, 2011; Holley, 2016), and business and economics research (e.g. Reinecke et al., 2012; Schouten and Glasbergen, 2011). Furthermore, the seminal article by Biermann et al. (2009) can be regarded as a corner stone for the scientific discourse on fragmented sustainability governance.

Lacking a single overarching governance entity or rule setting authority, governance naturally comes with some degree of fragmentation (Kalfagianni, 2014; Zelli and van Asselt, 2013). While scholars agree on the relevance of fragmentation, there is a lack of definitional clarity (Isailovic et al., 2013; Pattberg et al., 2014; Zelli and van Asselt, 2013).

Similar to the debate on framing ‘governance’ (Bush et al., 2015; Welch, 2013), scholars have not agreed on a universal understanding of what fragmentation means and how governance becomes fragmented. In the simplest way, fragmentation refers to the simultaneous provision of sustainability governance by different actors and approaches.

Existing research analyzed different factors that explain the resulting fragmentation of sustainability governance schemes for different commodity sectors (e.g. Reinecke et al., 2012; Smith and Fischlein, 2010; Turcotte et al., 2014; Von Geibler, 2013). Based on a literature review, this paper develops four overarching categories that help explain the fragmentation of sustainability governance: contextual factors, intra-organizational & inter-organizational factors, as well as the scope of governance (Table 1).

2.1. Contextual factors

Sustainability challenges in commodity sectors and along global value chains are not occurring in a vacuum but take place in a specific context. Therefore, governance approaches to tackle these challenges are also embedded in contextual circumstances. This context is shaped by the overarching regulatory environment and the respective industry characteristics.

According to the literature, a key explanation for the variety of governance approaches could be the “absence of an overarching authority, such as a state government or industry association, [that] creates a space that allows private actors to become involved in regulation” (Manning and Reinecke, 2016, p. 631). However, according to Reinecke et al. (2012), little is known whether the existence (or absence) of an encompassing overarching authority leads to fragmentation of governance approaches or not (Reinecke et al., 2012).

While some commodity sectors show a multiplicity and diversity of governance approaches (e.g. textile and coffee), other sectors (e.g. fishery) only show a limited number of sustainability governance approaches (Fransen, 2011; Schouten and Bitzer, 2015; Turcotte et al., 2014). Some researchers suggest that the specific characteristics of a commodity industry can impact the resulting degree of fragmentation (Fransen and Conzelmann, 2015). According to Fransen and Conzelmann (2015, p. 261f), relevant industry characteristics can e.g. include the “degree of industrial concentration”, the “reputation sensitivity” of firms in the sector, their “functional similarity” as well as the “competitive value of the economic activity” in the sector.

2.2. Intra-organizational factors of governance makers

Sustainability governance is shaped by governance makers. Yet, governance makers are not a homogeneous entity but resemble a great diversity of actors such as civil society groups, companies and governmental bodies (Acharya, 2016; Köhne, 2014; Rasche, 2012; Zeyen et al., 2016). Put differently, the organization or group of actors behind a sustainability scheme typically consists of a variety of actors. I use the notion of ‘intra-organizational factors’ to assess the internal factors of such sustainability schemes, e.g. including the composition of internal actors and the mission and vision. Given their heterogeneous constituency, the literature suggests that governance makers show different understandings and conceptualizations of sustainability, as they have an individual framing of sustainability or sustainable practices (Bitzer, 2012; de Bakker et al., 2019; Manning and Reinecke, 2016; Smith and Fischlein, 2010). This framing of sustainability is closely linked to

normative beliefs which can considerably vary amongst governance makers (Hospes, 2014; Reinecke et al., 2012; Tallontire, 2007). Therefore, some scholars suggest that this is a key factor that helps us understand the plurality of governance approaches (Nelson and Tallontire, 2014).

Closely related, different and often heterogeneous governance makers can have varying viewpoints on the ‘right’ ends of setting governance for sustainability, resulting in different objectives, definitions of the problem to be solved and agendas (Fransen, 2011; Manning and Reinecke, 2016). The internal diversity of governance makers often-times comes with a plurality of opinions on determining the objectives. In other words, the objectives of a governance maker can be the result of a discursive consensus finding within the governance organization (Bartley, 2007; Manning and Reinecke, 2016).

2.3. Inter-organizational factors: interactions between governance makers

Third, governance for sustainability is not shaped by single governance makers in isolation. Instead, governance makers interact and have relational ties. So far, the literature inter alia focused on competition between governance makers and its effect on the multiplicity of governance schemes (Gulbrandsen, 2005; Meidinger, 2011; Prado, 2013; Smith and Fischlein, 2010). Rivalry of private governance makers occurs e.g. in the coffee and forestry sector, such as in the case of the Forest Stewardship Council (FSC)¹ and the Programme for the Endorsement of Forest Certification (PEFC) (Bartley, 2007; Bloomfield, 2012; Lee, 2009; Muradian and Pelupessy, 2005; Reynolds et al., 2007; Sasser et al., 2006). In the context of fragmentation, competition between governance makers can come in many forms. Governance makers can e.g. compete for the “definition of sustainability performance (Smith and Fischlein, 2010)” (Bitzer et al., 2012, p. 359), the ‘right’ ends and means to tackle selected sustainability challenges, or over market shares of goods certified with their respective sustainability labels (Bitzer, 2012; Reinecke et al., 2012). According to some scholars, competition does not necessarily lead to a smaller number of governance actors, but can instead lead to an emergence and continuing existence of multiple sustainability schemes (Turcotte et al., 2014).

2.4. Scope of governance

Sustainability governance can address a great variety of issues and stakeholders. In this regard, the scope of governance approaches is an important factor to understand the multiplicity of governance in a single commodity sector. As a consequence of the internal and external differences in framing sustainability and the deduced ends and means, the focus on sustainability topics may considerably vary across governance makers. Different governance approaches can range from addressing very specific subject matters, e.g. handling of chemicals, to universal sustainability challenges such as dealing with social aspects in general (Acharya, 2016; Reinecke et al., 2012).

Different governance makers can have varying stakeholder groups, as they e.g. focus on industrialized and large producers rather than small-scale actors (Auld et al., 2015; Duggan and Kochen, 2016; Reinecke et al., 2012) or address different geographical regions (Foley, 2017; Fransen, 2011; Pattberg, 2006; Pekdemir, 2018). Therefore, sustainability governance can be fragmented with regard to the specific target audiences of the respective governance makers. Addressing different audiences naturally includes aspects of communication: While some governance makers are visible to the end consumer (e.g. via labels), others stay invisible for regular end consumers and rather focus on business-to-business (B2B) transactions.

In a nutshell, this section introduced the notion of fragmented sustainability governance and provided four general categories of

factors that can explain the fragmentation of sustainability governance. These factors resemble important mechanisms that explain governance fragmentation regardless of the commodity sector – be it cotton, coffee or copper. Yet, they provide only limited guidance with regard to sector-specific factors that contribute to fragmentation. Furthermore, we have little knowledge on how these categories interact in a comprehensive setting. Therefore, the general categories of factors are investigated and refined in the particular case of the gold sector, using a comprehensive case study.

3. Research design

This study uses a qualitative case study approach (Siggelkow, 2007; Sousa and Voss, 2001; Voss et al., 2002; Yin, 2009) to apply and refine the identified general factors of governance fragmentation and to identify new, case-specific factors. Sustainability governance for gold is used as the respective case, whereas the unit of analysis is the organizational field of actors, in the form of eleven sustainability schemes for gold and their respective organizational bodies. This includes the Initiative for Responsible Mining (IRMA), the International Council on Mining & Metals (ICMM), the International Cyanide Management Institute (ICMI), the London Bullion Market Association (LBMA), the World Gold Council (WGC), the Responsible Minerals Initiative (RMI), the Responsible Jewellery Council (RJC), the Alliance for Responsible Mining (ARM), Fairtrade International, as well as the Regional Certification Mechanism (RCM) and the Certified Trading Chains (CTC) approaches. Following DiMaggio and Powell (1983), this approach aims to take the “totality of relevant actors” and their respective composition and relationships into account (1983, p. 148).

3.1. Choosing the case of governance for gold

Governance for gold resembles an excellent case to study the emergence of fragmented governance, primarily because governance for gold is dynamic and still in the making. The recent years are characterized by the simultaneous emergence of a multitude of different sustainability schemes. While other researchers focused on sectors like “agriculture, forestry, and apparel manufacturing” (Wahl and Bull, 2014, p. 585), there are only few studies that highlight aspects of sustainability governance in extractive industries and its fragmentation (Kickler et al., 2018; Marques, 2016; Mori Junior et al., 2017; Vogel, 2018; Young, 2018; Young et al., 2014).

3.2. Data sources and data analysis

The case study draws on multiple sources of data, including expert interviews and secondary data (Sousa and Voss, 2001; Yin, 2009). It includes 26 semi-structured interviews with key experts. The questions in the semi-structured interview guide particularly focused on the emergence of multiple sustainability schemes in the gold sector, the reasons and consequences of fragmentation, as well as the inter-relationships between the different governance actors. The experts are representatives from different stakeholder groups and were purposefully selected, with representatives from sustainability schemes being the primary point of contact. All interviewees were anonymized and received an identifier (ID) code, indicating their stakeholder group with C (company), G (governance maker), N (NGO) and R (research) (see Table A.2 in the Appendix). The interviews were conducted between November 2017 and April 2018, lasted 65 min on average and were conducted in English, German or Spanish. Where applicable, direct quotes were translated to English. All interviews were transcribed verbatim and were manually coded, using the software MAXQDA to support this process. The structured coding process included three steps: open line-by-line coding, aggregating the codes with underpinnings from the literature, as well as re-coding and revising the code-set. Additional data sources include freely accessible sources such as the

¹ A list of abbreviations can be found in Table A.1 in the Appendix.

governance organizations' websites, the actual standards or principles of the sustainability schemes, public documents, research publications and media reports (Zander et al., 2016). The additional data sources were analyzed with a qualitative data analysis approach, yet without following the structured coding approach that was used for analyzing the expert interviews. Findings from this additional data analysis are used to support the findings from the expert interviews and to provide further information on the sustainability schemes in the gold sector (see e.g. Fig. 1 and Table 2).

4. Explaining governance fragmentation in the gold sector

This section provides a description of the case and the empirical findings and contextualizes the insights from the literature review in the specific case of fragmented governance in the gold sector. Furthermore, selected results are discussed within the immediate context of the case study. In more detail, I explore how the identified general factors for fragmentation manifest in the case of gold and which specific factors for fragmentation occur in the gold sector. In particular, eleven sustainability schemes for gold are considered. The findings suggest that the fragmentation of sustainability schemes for gold is due to multicausal factors:

“Fragmentation does exist but it is not one-dimensional. There are different reasons for fragmentation related to different standards, different organizational modes of operation (e.g. funding), different objectives and incentives (of organizations or their funders).” (R6).

In the words of one interviewee, the fragmentation of governance for gold is “the reality in which we operate” (C7). And further:

“It seems really nice and simple to say: ‘Let’s just have one standard’. [But] the reality is always a bit more nuanced than that. You have to ask yourself: ‘What is the purpose of this standard? Whom is it working for? What are the stakeholders? What are the expectations?’” (C7).

Against this background, there has been a strong increase in governance approaches in the gold sector. Although some national and international standards and legislations already existed to regulate the extracting, processing and trading of gold, a multiplicity of sustainability schemes with respective organizations emerged. As a consequence, one could witness the emergence of an “alphabet soup of [...] acronyms” (Horowitz, 2006, p. 307) of governance schemes and actors for gold-related sustainability challenges over the last two decades. Fig. 1 displays the development of key actors and governance approaches related to gold.

The development of sustainability governance for gold started in the early 2000s and gained further momentum in 2010 with the introduction of the Dodd-Frank Act and the OECD (Organisation for Economic Co-operation and Development) Guidance for Responsible Supply Chains (OECD, 2013) with a variety of different governance approaches following shortly afterwards. In addition, the launch of the International Cyanide Management Code (2002), the Conflict Free Smelter Program (2008) the LBMA Responsible Gold Guidance and the WGC Conflict-Free Gold Standard (both 2012) are milestones for the large-scale mining sector (LSM). With regard to artisanal and small-scale mining (ASM), the development of a Standard Zero (in 2006) by the Alliance for Responsible Mining (later on in cooperation with Fairtrade), as well as the resulting Fairmined and Fairtrade standards resemble key development steps.

In order to understand the emergence of a fragmented governance landscape for gold, the following sections highlight contextual factors of the gold industry, intra-organizational mechanisms within the governance makers, inter-organizational interactions between these actors as well as the scope of governance of sustainability schemes.

4.1. Contextual factors in the case of gold

This section highlights the unique circumstances in which governance for gold is shaped, including both regulatory aspects (4.1.1) as well as industry characteristics (4.1.2).

4.1.1. Regulatory environment for gold

The different sustainability schemes for gold are embedded in an overarching regulatory environment that impacts the prevailing governance fragmentation in the form of different sustainability schemes. One can differentiate between *sector-specific* regulation and *unspecific* regulation that was not exclusively designed for gold-related sustainability challenges.

First, there exists a plethora of national and international frameworks, global standards and regulations that are used by the sustainability schemes for gold as references to shape their content. These sector-unspecific regulations do not necessarily have a focus on mining or gold. According to one interviewee:

“Overarching frameworks are numerous. [...] It could be up to 80 different frameworks, [...] not for gold, but for metals, mining and minerals [...]. I mean it’s a very long list, so I would say [the Extractive Industries Transparency Initiative (EITI), the Global Reporting Initiative (GRI), the International Finance Corporation (IFC) performance standards, the International Labour Organization (ILO)] conventions, convention of biological diversity, World Heritage Convention, I mean it’s an enormous list.” (C3).

In addition, the findings suggest that national or regional regulations and laws can impact the number and content of sustainability schemes for gold and eventually lead to fragmentation. One expert summarizes this as follows:

“Standards only supplement or work based on regulation. Regulation will always differ from country to country, mining differs from country to country [...]. This justifies multiple standards.” (R6).

The findings show that the existing diversity of overarching frameworks and regulations that are relevant for gold-affiliated sustainability challenges is mirrored by the diversity of sustainability schemes.

Second, the findings in the gold sector suggest that there are distinct guidelines and regulations with great importance for gold (specific regulation). This particularly includes the Dodd-Frank Act (Dodd-Frank Wall Street Reform and Consumer Protection Act, 2010) and the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (OECD, 2013). A majority of the sustainability schemes for gold either directly or indirectly refer to the OECD Guidance and/or selected sections² of the Dodd-Frank Act.³ According to the interviewees, both the Dodd-Frank Act and the OECD Guidance are considered as “game changers” (N4) for the gold sector that rapidly altered the overall governance landscape:

“The OECD Due Diligence in the gold supply chain, the guidance that they put out, that is a transparency initiative that is really looking at what is required to be able to sell artisanal gold into the international market essentially.” (N4).

And further:

“The dynamic around the discussion of conflict minerals was mainly triggered by the legal regulations in the USA, the Dodd-Frank Act. This initial impulse has strongly leveraged the discussion on

² In the case of gold and extractive industries, the sections 1502, 1503 and to some extent 1504 of the Dodd-Frank Act are of importance.

³ For an encompassing assessment of the interlinkages and cross-references of different sustainability schemes for gold, I recommend the study by Kickler et al. (2018).

sustainability and resource extraction and responsibility in the supply chain. And since then a lot happened based on this conflict mineral discussion, like the [European Union (EU)] regulation and all these different initiatives.” (R1).

Yet, the Dodd-Frank Act and the OECD Guidance remain vague in some aspects and do not cover all relevant gold-related sustainability issues. Therefore, the findings suggest that they allow the sustainability schemes a degree of freedom to interpret and operationalize them:

“In principal, the five-step model of the OECD is already the perfect standard. [...] The only question is then, how to interpret the whole thing.” (C2).

And further:

“There are international treaties and so forth which were well-intentioned, but remain very vague considering the implementation. This makes it difficult to implement them in detail and to audit them.” (R7).

Overall, the analyzed data lead to the conclusion that the availability of two key references (sector-specific) and various additional governance instruments (sector-unspecific) impacts the multiplicity of sustainability schemes for gold, due to vagueness of the references, uncovered aspects and the possibility to choose different references.

4.1.2. Industry characteristics

The unique industry characteristics of the gold sector become obvious when assessing the value chain architecture, the involved stakeholder groups and the sustainability challenges. The value chain architecture of gold has specifications in the dimensions of producers and buyers, focal actors in the chain, as well as geographical aspects.

To begin with the latter, the value chain for gold spans several stages and is strongly globalized. Considering the upstream part of the chain, it entails the actual exploration and extraction of gold, trading by intermediaries, processing and shipping the gold to the smelters (Kickler and Franken, 2017). Linking the upstream and the downstream part of the value chain, the refiners or smelters play a crucial role in processing gold. While the extraction of gold primarily takes place in China, Australia, Russia, the Americas as well as Africa, the refining of gold does not necessarily correlate with the countries of origin. In particular, Swiss smelters are key global players. The downstream value chain entails the fabrication of intermediary products, the manufacturing (e.g. of jewelry) as well as sales and recycling usages (Kickler and Franken, 2017). According to one interviewee, the various actors in the gold value chain complicate the design and implementation of governance approaches:

“The roots of the problem lie in the complexity of the industry itself. [...] The mining issue - from the outside - at first blush, people say ‘that’s the mining industry’. But it is extraordinary complex! There are different parts of the industry that follow very different objectives!” (G6).

Going back to the extraction phase of the value chain, gold is supplied by both LSM and ASM approaches. One expert summarizes this as follows:

“Within the gold sector, you have to make a clear distinction between small scale, artisanal, medium and the large, industrial mining sector which uses very different [...] techniques [...] and has very different economic and social implications. There is no *single* gold sector.” (R1).

For the purpose of this study, LSM refers to the “activity of major companies as well as to mid-tier and junior-level companies or to any formal company that complies with international performance standards” (CASM, 2009, p. 7). On the other hand, ASM refers to mining practices by local communities that are often characterized by “low

investment, labor intensive local production, informality, as well as no or low levels of mechanization and access to market” (CASM, 2009, p. 9). While the LSM-sector is dominated by a few multinational companies and an encompassing multiplicity of suppliers, sub-contractors and service providers, it is estimated that 10–15 million miners work in the ASM gold sector (Armah et al., 2013; CASM, 2009; Veiga and Bakker, 2004).⁴

Severe sustainability challenges arise from the mining, processing and trading of gold (Andrews, 2016; Childs, 2008; Mudd, 2007). Yet, one has to emphasize that LSM and ASM actors can face rather different challenges. For LSM, aspects of land degradation, indigenous rights and potential conflicts with local communities might be ‘on top’ of the sustainability list, while ASM actors are confronted with the usage of hazardous chemicals, financing of armed conflicts and dangerous working conditions (see e.g. Andrews, 2016; Childs, 2008; Mudd, 2007).

Considering the other end of the value chain (downstream), the refined gold supplies three major market segments: industrial applications, jewelry and financial purposes. The findings reveal that each of these buyer markets has certain particularities, stakeholders and resulting expectations how sustainability schemes should be designed.

All extracted gold has to go through a smelting and refining process. In general, “smelters and refineries are metallurgical facilities that produce crude and refined metal products, respectively. [...] For gold, refining is the critical [step] for producing a salable pure product.” (Young, 2018, n. 1).⁵ Given the importance of these process steps, it seems reasonable to argue that smelters resemble a ‘bottleneck’ in the value chain. However, the data suggest that the role of smelters as focal actors in the gold value chain is contested. On the one hand, smelters can be considered “the key pinch point in the supply chain. And so, they are the actors that can excerpt influence upstream and downstream” (G5). In more detail, smelters are an integral part of the supply chain structure and “play an important role, because they are comparatively few [...] and accordingly have an impact on the upstream and downstream supply chain” (R1). One expert supports this by stating:

“Smelting is the key point in the value chain. And I would say that initiatives that have the traceability and chain of custody or some method of control in that choke point, they avoid that problem [of conflict minerals] largely.” (G4).

On the other hand, some experts counter the aforementioned importance and potential leverage point of smelters to implement and shape sustainability schemes for gold. When asked if smelters had a distinct importance for sustainability schemes, one interviewee stated:

“No. Maybe insofar as you need a smelter to achieve the purity of the gold. But they do not have a powerful position as such. Because there are a lot of smelters and they are geographically dispersed. [...] E.g. there are a lot of smelters in India – don’t get me wrong here – so cautiously speaking, they have zero sustainability standards there.” (C1).

In order to understand the industry characteristics of gold, one has to consider the overall characteristics of the extractive industries. Starting in the late 1990s, the extractive industries “increasingly embraced [...] concepts of ‘environmental management’, ‘sustainable development’, and ‘corporate social responsibility’” (Hilson, 2006, p. 225). A change of perception considering more responsible practices emerged in the extractive industries, particularly regarding gold and

⁴ Although the differentiation between LSM and ASM actors is used, one has to be aware that these categories are not well defined, as additional medium-size actors might not fit into any of the categories.

⁵ Despite their different purposes and technical processes, smelting and refining are often used as interchangeable terms (Young, 2018). I refer to smelters as an overall facility to smelt and refine gold.

the so called 3T conflict minerals (tin, tungsten and tantalum) (Jenkins and Yakovleva, 2006; Young, 2018).

4.2. Intra-organizational factors in the case of gold

The findings reveal that the eleven governance makers for gold and their respective sustainability schemes considerably differ regarding their organizational constituency, their members and the resulting ends and means of their governance engagement. The following sections elaborate how the internal perspective of governance actors influences the overall resulting fragmentation of governance for gold. In more detail, they highlight the impact of the governance initiator and its respective members (4.2.1), the organizational logic and mission (4.2.2), the related internal framing of sustainability (4.2.3), as well as the used means (4.2.4), on governance fragmentation.

4.2.1. Governance initiator and members

The governance makers behind the sustainability schemes have varying organizational backgrounds: This includes e.g. multi-stakeholder initiatives and civil society based actors such as IRMA, ICMI or Fairmined, as well as governance makers with an explicit background in mining companies and associations like the WGC and ICMM (Kickler and Franken, 2017). Furthermore, additional governance makers are rooted in the jewelry supply chain industry (RJC), or come from a semi-governmental background like CTC and RCM.

The findings suggest that members of a governance maker play an important role when analyzing the development of the fragmented governance landscape for gold. The organizational members are at the core of each governance maker and have strong interlinkages with the organizational mission, logic, objectives and understanding of sustainability, which are presented in the subsequent sections. The governance makers for gold have distinct organizational member structures: Organizations like ICMM, LBMA and the World Gold Council have a strong industrial membership, particularly including the large players in the industry. Yet, one can further differentiate the membership of industrial companies: In the case of the RJC, the majority of its members are jewelry manufacturers and retailers as well as gold traders and refiners. In contrast, the actual gold producing or extracting companies seem to be in the minority in this governance organization. According to one interviewee:

“RJC, as well as LBMA and RMI are representations of interests with a respective industry behind them. And they can have considerably different visions on how responsible supply chains should look like.” (C2).

With regard to ASM, the ARM behind the Fairmined Standard is organized as an alliance with distinct mining partners on the ground, while the Fairtrade International foundation serves as an umbrella organization for a variety of sustainability schemes, including the Fairtrade Standard for Gold and Precious Metals. For the specific case of gold, Fairtrade partners with a technical advisory group, several consultants and the Artisanal Gold Council, while keeping the organizational structure of a foundation (Fairtrade Labelling Organizations International e.V, 2014b).

While one could assume that sustainability schemes for gold mainly came from civil society organizations, the findings show that reality looks different, as many governance makers are primarily composed of industrial actors. One expert summarizes this finding as follows:

“[A] lot of companies initiate governance initiatives and civil society organizations are somewhat incorporated, but it remains unclear, whether and to what extent they are involved in setting and monitoring the standard.” (N2).

While companies are not necessarily ‘better or worse’ governance makers than civil society actors, this finding helps to understand why certain governance makers focus on very particular sustainability

aspects of gold and respectively address specific target audiences such as industrial refiners and large-scale mines, whereas small scale and informal miners often ‘fly below the radar’ of these industry-led governance organizations.

4.2.2. Organizational logic and mission

The analyzed data suggest that the organizational logics and missions of governance organizations considerably vary in the case of gold and lead to a fragmentation. Considering different logics of the involved governance organizations, one interviewee suggests that some governance makers might have

“a logic of really implementing a positive change ... at Fairtrade perhaps the logic of scaling high, [is] to reach a lot of actors, a high coverage and eventually you lose the contact to the ground. This is similar at the RJC: many members and certified companies, but very [few] mining actors.” (R7).

Adding to the notion of different organizational logics, the findings show that the motivation of members to join a governance maker (or to create a new one) considerably differs and therefore fosters a multiplicity of sustainability schemes. According to one expert:

“Different actors are interested for different reasons (drivers). It may be a financial motivation caused by the organization itself (creating organizational synergies, competition for funding/clients), it may be due to downstream client requests (industry and consumers getting confused with too many labels), it may be due to regulatory requirements imposed by governments.” (R6).

In particular, the interviewees stress the importance of the funding of a governance maker and its ‘business model’:

“It really depends on who is funding the governance organization, whether the organization is funded by an international donor like the [United Nations (UN)] or the World Bank or by the members of a professional industry standard like RJC.” (R7).

Several experts argue that the different ‘business models’, as a key aspect of the organizational logic, foster the multiplicity and continuation of sustainability schemes for gold:

“[S]tandards are always a business model. If Fairtrade starts to market [fair] gold, then [they] invest to define the criteria and to find the sources [of gold] that comply with my criteria. And my return [on investment] is [...] the license fee provided by those who use my label. This is a common [business] model of many standards”. (N1).

The importance of different business models of governance makers particularly occurs regarding Fairmined and Fairtrade which have similar approaches and, according to an interviewee, address “the same target group”, but Fairtrade’s “specific business model hinders them to cooperate with others” (R3). Against this background, there seems to be little incentive to actually abandon one’s business model, while incentives remain to adhere to the given business model and organizational logic.

Next to the organizational logic and structure, the data suggest that the mission of a governance maker impacts the fragmentation of governance for gold. Different governance actors seem to:

“encapsulate in their mission statements how they see sustainability meets with their organization, where their organization is going. And I think that’s almost like the short hand, the abbreviation of how they understand sustainability.” (C3).

While organizations like ICMM, WGC and LBMA are interested in maintaining a good reputation of their industrial members by striving for more responsible practices, other organizations are e.g. bound to their mission on bringing positive change to small gold miners in developing countries. Taking these different missions into consideration,

it is no surprise that we witness a great diversity of governance schemes. One expert describes this as follows:

“in the case of Fairtrade, they have a variety of goods, they do not only have gold, they also work with agriculture. So maybe it is difficult for them to specialize in ASM. In [the case of Fairmined they] are completely specializing and focusing on that, because it's [their] mission [and] vision [...]” (G3).

In addition, the findings suggest that the organizational mission of each governance maker is inherently bound to the institutional background of the respective organization, e.g. considering the differences between industrial actors as governance makers, multi-stakeholder initiatives and civil society organizations. For the latter group, one expert argues:

“Well, those are deeply rooted values in, I would say, environmental movement or civil society organizations. They want to stick to their ethics and they will not budge. If Fairtrade only wants to work with producers in developing countries, that is their mantra. [...] That's just the way they're thinking, that's their leadership, that's their mission.” (C3).

As an example, the mission of LBMA as a key player for the LSM sector is to “ensure the highest levels of leadership, integrity and transparency for the global precious metals industry by setting standards and developing market services” (LBMA, 2018), whereas Fairtrade Gold wants to “see transparency, traceability, truth and justice embedded into the livelihoods of the millions of artisanal and small-scale miners across the world” (Fairtrade Labelling Organizations International e.V., 2014a). By doing so, Fairtrade aims to “promote sustainable development and to reduce poverty through fairer trade”, which is aligned with the “core Fairtrade values of empowering producers and local communities through trade and delivering economic, social and environmental transformation and restoration” (Fairtrade Labelling Organizations International e.V., 2013, p. 3).

4.2.3. Internal framing of sustainability

The findings in the gold sector reveal that different members of the governance maker can have diverging viewpoints on the content of its sustainability scheme. In order to come to an agreement, the governance maker must provide a framing of sustainability. For the commodity of gold, the introduced differentiation between LSM and ASM is crucial, as their specific sustainability challenges differ considerably. Against this background, there is ample room to frame the idea of sustainability. According to one expert, organizations first have to deliver an internal framing of sustainability:

“First, you have to define criteria: ‘What does sustainability mean?’ That is essential when you want to create a standard. First, you have to go through a discussion with different stakeholders and define, what [you] understand as sustainability” (N1).

Interestingly, in the ASM context, sustainability schemes rather work with the notion of ‘fair’ considering the Fairmined and Fairtrade standards or the closed-supply chain approach of Fair Trade in Gems and Jewelry. This ‘fairness framing’ seems to follow a rather encompassing understanding of sustainability that incorporates multiple dimensions of sustainability. In the eyes of one interviewee,

“[...] sustainability or sustainable practices are how we create opportunities for the ASM [...]. The sustainability is not only to reduce impacts in the environment, it's also to worry about *all* issues. In our case, we believe that it is necessary to worry about different sustainable issues, the environment, the labor and social aspect, economics, the ethical business.” (G3).

On the other hand, the LSM and medium sized mining sector prefers the notion of ‘responsible’, as proven by the Responsible Jewellery Council, the LBMA Responsible Gold Guidance or the forthcoming

standard by the Initiative for Responsible Mining Assurance. Yet, following this framing of responsible practices mirrors the approach of some LSM schemes that resulted in a rather narrow focus, e.g. solely focusing on one-dimensional aspects of sustainability like ‘conflict-free’ (WGC, RMI) or the handling of chemicals (Cyanide Management Code).

When finding such framing, the results suggest that each governance maker has to find an internal consensus, as different members have to agree on a common understanding of sustainability (framing) and the respective goals and means to operationalize it. In the case of gold, the individual internal framing of sustainability can be considered to impact the ends, means and addressed sustainability topics of each governance maker and therefore fosters fragmentation.

4.2.4. Means

The analyzed sustainability governance schemes for gold show substantial differences when considering their means. This includes inter alia standards (systems), certifications, frameworks and principles as well as guidance and tracking systems. While most schemes are voluntary, some have a quasi-mandatory character (e.g. the LBMA guidance for refiners that want to stay on LBMA's ‘Good Refinery List’). One expert summarizes this as follows:

“LBMA, RMI or World Gold Council, they don't really belong to the category of voluntary standards. They are almost tools to realize legal obligations like the different regional or national implementation of the OCED guidance or the Dodd-Frank Act. So those standards help to translate the mandatory requirements into a feasible and pragmatic manner in order to facilitate the implementation for their members.” (C4).

Different means allow a variation in depth and stringency of the governance scheme, as e.g. standards in the gold sector are mostly very detailed and encompassing documents with more or less clear indicators (Alliance for Responsible Mining and Fairmined, 2014; Responsible Jewellery Council, 2013). On the other hand, frameworks and principles are often characterized by brevity and lack of guidance for operationalization, thus requiring additional references.

Additionally, schemes differ with regard to using labels: Some schemes have a strong focus on the entire gold supply chain and therefore provide a product-based label for end consumers of gold, such as Fairmined and Fairtrade (Kickler and Franken, 2017). In contrast, other schemes, like LBMA or WGC, focus on certification logos for their members, but so far do not use product-based labels. As the LBMA has a specific focus on the supply chain and lacks visibility to end consumers, it makes sense to work with a B2B certification instead of a product-based label for end consumers.

4.3. Inter-organizational factors in the case of gold

The findings highlight that governance makers in the gold sector show various interaction behaviors that are relevant for the resulting fragmentation: shaping the discourse on sustainability (4.3.1), niche experiments & pre-competition (4.3.2) and competition (4.3.3).

4.3.1. Shaping the discourse on sustainability in the gold sector

Similar to framing an *individual* understanding within the governance organization, governance makers also *collectively* shape the discourse on sustainability in the overall gold sector. Considering the development of governance for gold over time, ICMM as an industry association delivered a contribution to bring the discussion on more responsible practices on the table amongst leading industrial actors. From a civil society perspective, public awareness was directed towards gold and its sustainability challenges, e.g. through the ‘No Dirty Gold campaign’ by Earthworks in 2004.

Yet, similar to other sectors with fragmented governance, it remains a key challenge to find and agree on a common vocabulary (Reinecke et al., 2012). Finding such a consensus is partly driven by the Dodd-

Frank Act and the OECD Guidance as key references for the involved sustainability schemes. In addition, similar to studies in other sectors (Manning and Reinecke, 2016), the triple bottom line of sustainability became a sort of 'lowest common denominator', although the potential contradiction of sustainability and mining remains a contested field of discussion. According to one interviewee, consensus is e.g. reached

“as interfaces emerge between the different initiatives, e.g. through mutual recognition between LBMA, RJC and [the Conflict Free Smelter Program (CFSP)] and between RJC and Fairmined and Fairtrade. [...] So, communalities increasingly emerge, leading to a common ground.” (C4)

Although certain concepts (like the triple bottom line) and terms (like sustainable development) seem to form a 'lowest common denominator', the case study shows that the resulting sustainability schemes still considerably differ regarding their actual scope, topics and target audience.

4.3.2. Niche experiments & pre-competition

Considering the origins of sustainability schemes for gold in the beginning of the 2000s, the findings reveal that this early development was primarily driven by niche experiments to establish schemes for particular issues and target audiences. Due to this niche character, the different schemes had rather few direct contact points with each other in the early days of implementing more sustainable practices. However, regarding the introduction and framing of sustainability or responsibility in the overall industry, the different actors strongly debated on the assumptions on sustainability in the mining context. The findings suggest that, while the schemes were acting in their niches on an operational level, they were in contact on a more normative level to jointly discuss the overall basic assumptions of framing sustainability.

This early phase of sustainability schemes in the gold sector also showed several cooperation approaches: In the ASM sector, ARM and Fairtrade jointly developed the so called Standard Zero for ASM gold in 2009, which served as the foundation for the Fairmined and the Fairtrade standards for gold. One interviewee frames this early development of governance as:

“collaborating and the pre-competitive space, before [the initiatives] get to markets. So, I think that's kind of connected to [...] getting rid of the worst practices, just getting to that level and then you can start to compete on those individual requirements that your standard can deliver on that you think that is specific either for your commodity or for your supply chain.” (C3).

4.3.3. Competition

The case study reveals that, in the case of governance for gold, competition is primarily framed as competition over market shares for certified gold. Therefore, other facets of governance competition (e.g. defining sustainability and sustainability performance) were assigned to different categories in this study (see e.g. the section on shaping the discourse on sustainability). The existing level of competition is seen as an ambivalent phenomenon by the interviewed experts:

“Certainly, these labels and standard systems [...] are in a kind of competition with other initiatives and need to generate profits and then there is a need for self-perpetuating the system and to get a higher market share of the market of certificates.” (R1).

Besides one exception, there is little evidence for an outstanding role of governance competition in the case of gold. In particular, no indications for any “outright competition” (G4) of sustainability schemes occurred. However, the findings show that competition between governance makers manifests itself in the relationship between Fairmined and Fairtrade. The respective organizations ARM and Fairtrade International originally joint forces to develop a standard. Yet, this cooperation only lasted three years and resulted in two

separate standards (Kickler and Franken, 2017). Diverging opinions on this phase out of the joint project exist. For some interviewees, there is definitely competition between Fairmined and Fairtrade:

“They are two initiatives working in the same sector, in the same place with the same people. They are not working together anymore. They were working together in the past, but they split.” (R4).

And further:

“The idea was that Fairmined [...] takes care of the technical assistance on the ground. And Fairtrade takes care of opening the market. But there was no market. So eventually Fairmined had enough of this partnership. So, there is definitely some fierce competition going on. And this competition is ridiculous considering the handful of certified mines.” (G2).

Yet, this perception of competition is contested. Rather than speaking of competition, one interviewee states that the temporary partnership between Fairmined and Fairtrade was eventually not prolonged due to diverging organizational characteristics: “Different philosophies or histories of both institutions collided which were not fully compatible. So, they decided [...] not to renew their partnership.” (C4). And further:

“The background is different. Fairtrade takes care of all kinds of fair supply chains since a long time. [...] the Alliance for Responsible Mining [...], they are coming from the gold sector, [...] from the ASM sector. They have technical and organizational experience. In the beginning the cooperation worked well, because [Fairtrade] knows how to establish ethical supply chains. And [Fairmined] knows how to organize and support cooperatives on the ground. However, due to Fairmined's good reputation, they no longer need Fairtrade.” (C2).

Regardless of a potential competition between Fairmined and Fairtrade, the data show that different organizational logics and missions suggest that both organizations remain independent governance makers with separate schemes, despite their evident overlaps on the content level, thus maintaining the multiplicity of governance approaches.

4.4. Scope of governance in the case of gold

The sustainability schemes for gold considerably vary regarding the content of their schemes (4.4.1), their different target audiences (4.4.2) and their supply chain coverage (4.4.3).

4.4.1. Content

Governance makers for gold focus on different sustainability dimensions and issues (Elkington, 1998): Out of eleven schemes, six follow a multidimensional approach, as they include social, environmental and economic aspects, whereas five schemes have a particular focus on one or two dimensions of sustainability. As an example of addressing multiple dimensions, the IRMA standard delivers an encompassing approach, as it provides indicators for various sub-categories of social, environmental and economic aspects. In contrast, approaches like the Cyanide Management Code and RMI focus on rather selective challenges, like the safe and responsible management of cyanide or human rights, transparency and traceability. In light of these findings, the addressed sustainability aspects and their various sub-categories can be considered a key explanatory factor for the fragmentation of governance for gold.

Furthermore, the identified schemes can be classified into single vs. multi-commodity approaches. Out of eleven schemes, only one (WGC) has an exclusive focus on gold, while most schemes either focus on gold and associated precious metals (Cyanide Management Code, Fairtrade and Fairmined), on the 3 TG conflict minerals (CTC and RCM), or on all minerals and metals (IRMA, ICM). Two schemes particularly focus on

gold, but provide complementary guidance for additional metals like silver or palladium (LBMA, RMI). According to the interviews, the gold sector often lacks clear boundaries to other minerals and metals, as extractive resources often jointly occur at a single mining site. This could explain the existence and emergence of multi-commodity schemes. One interviewee describes this as follows:

“The gold mining industry is not just pure gold mining companies. The largest copper mining company is also one of the biggest gold miners! Because gold often comes with copper. [...] There are very loose boundaries! And the practices of one part of the industry also effect the other parts of the industry!” (G6).

Referring back to the different organizational characteristics, members and objectives of each governance maker, it is no surprise that a differentiation between commodity specific and un-specific schemes can be found. As an example, the findings show that RJC as a key actor along the entire jewelry supply chain, made a strategic decision to not only cover gold, but all jewelry-related minerals (gold, diamonds and platinum group metals). In contrast, the World Gold Council focuses on gold only. Amongst the interviewees, diverging opinions exist on the advantages and disadvantages of establishing commodity un-specific schemes in the context of gold:

“In an ideal world, we just want one mining standard that captures ALL the commodities. But it’s that complexity of the different commodities and that some of them are used for so many different purposes, that they say: ‘No, we’re special, we need our own. We have our own concerns, we have our own issues, we have our own supply chains. That’s not going to work for us.’” (C3).

Therefore, some governance organizations expand their scope by either including additional minerals and metals into their existing schemes, or by introducing new schemes (e.g. Fairtrade Silver). In contrast, there is a movement of governance makers that foster encompassing, commodity un-specific schemes (most prominently IRMA).⁶

4.4.2. Target audiences

Considering the specific industry characteristics of the gold sector, including its value chain organization and stakeholder groups, the findings reveal that sustainability schemes for gold are fragmented with regard to their addressed target audiences. More precisely, the data suggest that the respective stakeholders in the gold value chain considerably impact the fragmentation of governance approaches for gold. According to one interviewee:

“You have lots of different organizations and initiatives that are responding to stakeholder needs and therefore [...] use approaches that work for a particular aspect that is considered responsible practices.” (C7).

Sustainability schemes for gold address these diverse stakeholder needs by specific governance approaches. In the case of gold, the target audiences of the governance schemes differ with regard to a) the gold producing side (upstream), b) the buyer market (downstream) and c) the geographical location.

Considering the distinction between gold producers, the analyzed schemes either focus on small-scale or large-scale mining, due to their specific needs and sustainability challenges. One expert supports this with the following quote:

“There is a general segmentation between the industrial and artisanal gold sector, considering the producers. And a standard setter cannot cover both sectors.” (C4).

⁶ For a more detailed discussion on this phenomenon see [Kickler and Franken \(2017\)](#).

Given the very specific needs of these different producer groups, it is no surprise that so far, no scheme provides an encompassing approach for both ASM and LSM. According to Kickler and Franken (2017, p. 25), the “schemes were especially developed for or by one of the two sub-sectors so that the requirements are adjusted to the target group in terms of practicality and feasibility”. Out of eleven schemes, eight schemes primarily focus on LSM actors, whereas three focus on the ASM sector.

In addition to addressing different producer segments, sustainability governance for gold is fragmented with regard to different buyer markets: industrial applications, jewelry and financial purposes. In this vein, the RJC has a clear focus on the jewelry sector. In a similar manner, Fairmined and Fairtrade address end consumers of gold products, e.g. in the form of jewelry, using labels to articulate their sustainability claims. Schemes like LBMA and WGC are rather tailored to address the governance needs of industrial and financial purposes.

Furthermore, governance for gold is fragmented regarding different geographical regions, due to the characteristics of the gold value chain. While the majority of governance schemes is globally applicable, some address specific regions: Fairmined and Fairtrade focus on South America and Africa, whereas the RCM and the CTC schemes have a narrow focus on the region of the great lakes in Africa (Rwanda and the Democratic Republic of the Congo).

4.4.3. Supply chain coverage

Given the specific value chain characteristics of the gold sector, sustainability schemes address different parts of the supply chain. A main distinction can be made between a) entire supply chain schemes like RJC, b) schemes with a particular focus on the upstream part (e.g. IRMA, ICMM and the Cyanide Management Code) and c) schemes with a focus on refining and smelting (most notably: LBMA and RMI) ([Kickler and Franken, 2017](#)). [Table 2](#) provides a comparison of the supply chain coverage by different sustainability schemes for gold.

As a focal player in the supply chain, smelters could potentially support sustainability schemes, given their importance as the last step in the supply chain before gold becomes an unspecific commodity. Given this (perceived) importance, one would assume that any type of governance should first and foremost start by setting appropriate rules for the smelters for leveraging the impact of sustainability schemes. Following this rationale, some schemes focus on smelters when designing and implementing their governance approaches ([Kickler and Franken, 2017](#); [Young, 2018](#)). One expert supports this with the following statement:

“The smelters are certainly the bottleneck, similar to other metals. As long as this bottleneck is not sufficiently regulated by the law, the smelters will do what actors further up in the supply chain demand from them.” (N1).

In particular, the LBMA has a strong focus on smelters. However, according to one interviewee, smelters are not part of the fragmented

Table 2
Sustainability schemes’ supply chain coverage ([Kickler and Franken, 2017](#), pp. 19, 23; [Rüttinger et al., 2015](#); [Rüttinger and Griestop, 2015](#), p. 7).

	Upstream supply chain	Smelting/refining	Downstream supply chain	Afterlife usage (re-use, recycling)
IRMA	█			
ICMM	█			
Cyanide Code	█			
WGC				
LBMA		█		█
RMI		█		
RJC	█	█	█	
Fairmined			█	
Fairtrade			█	
RCM		Until exporter		
CTC		Until exporter		

governance landscape, as most of the smelters are associated with the LBMA:

“The consistency comes from the fact that 90% of the world’s gold will go through an LBMA [certified] refiner. So, if you take gold solely, then the supply chain for that mineral is not fragmented, because [the LBMA] obviously controls it. But look at [...] smaller refiners, who wouldn’t make the [LBMA] good delivery list requirements, then yes, there is fragmentation!” (G5).

5. Discussion

This section provides a more general discussion of the findings from the case study and introduces a conceptual framework (Fig. 2) based on the empirical analysis and the existing literature on fragmented sustainability governance that helps explain the fragmentation of sustainability governance in the gold sector. The framework incorporates both general factors (independent of the commodity sector) which are derived from the literature review and gold-specific factors which are stemming from the empirical findings. In more detail, the conceptual framework serves to refine, enrich and display these factors in their interaction in the case of the gold sector. It entails four overarching categories of factors for fragmentation of (private) sustainability governance: *contextual* factors (I.), *intra-organizational* (II.) and *inter-organizational* (III.) factors as well as the *scope of governance* (IV.).

Selected components of the framework are discussed in detail in order to refine and expand the scholarly knowledge on fragmented sustainability governance in the particular case of the gold sector.

Furthermore, this framework aims to stimulate the academic discussion on factors that explain the fragmentation of governance and particularly encourages researchers to apply the conceptual framework as a conceptual lens to study commodity sectors beyond gold. It thus also serves to identify potential areas of further research.

5.1. Regulatory environment (I.a & I.b)

Existing literature on the multiplicity of governance for a single commodity suggests that overarching governance approaches (or the regulatory governance environment) can impact the resulting degree of fragmentation in the respective sector (Manning and Reinecke, 2016; Reinecke et al., 2012). In the case of the gold sector, the findings show that the fragmentation of governance is affected by both sector-unspecific (I.a) and sector-specific (I.b) regulation. Yet, existing literature has so far scarcely considered such a differentiation between sector-unspecific and specific regulation and its potential interrelationship with governance fragmentation (see Pekdemir, 2018). Regarding sector-unspecific regulation (I.a), the findings suggest that the multiplicity of overarching governance references allows or enables a fragmentation of sustainability schemes in the gold sector. This can be explained as sustainability schemes for gold can choose from a great variety of overarching guidelines as potential references when designing their concrete governance tools. Depending on the addressed sustainability dimensions and issues, governance makers for gold can choose from a variety of guidelines to inspire their own schemes and standards.

Considering sector-specific regulation (I.b), the findings revealed

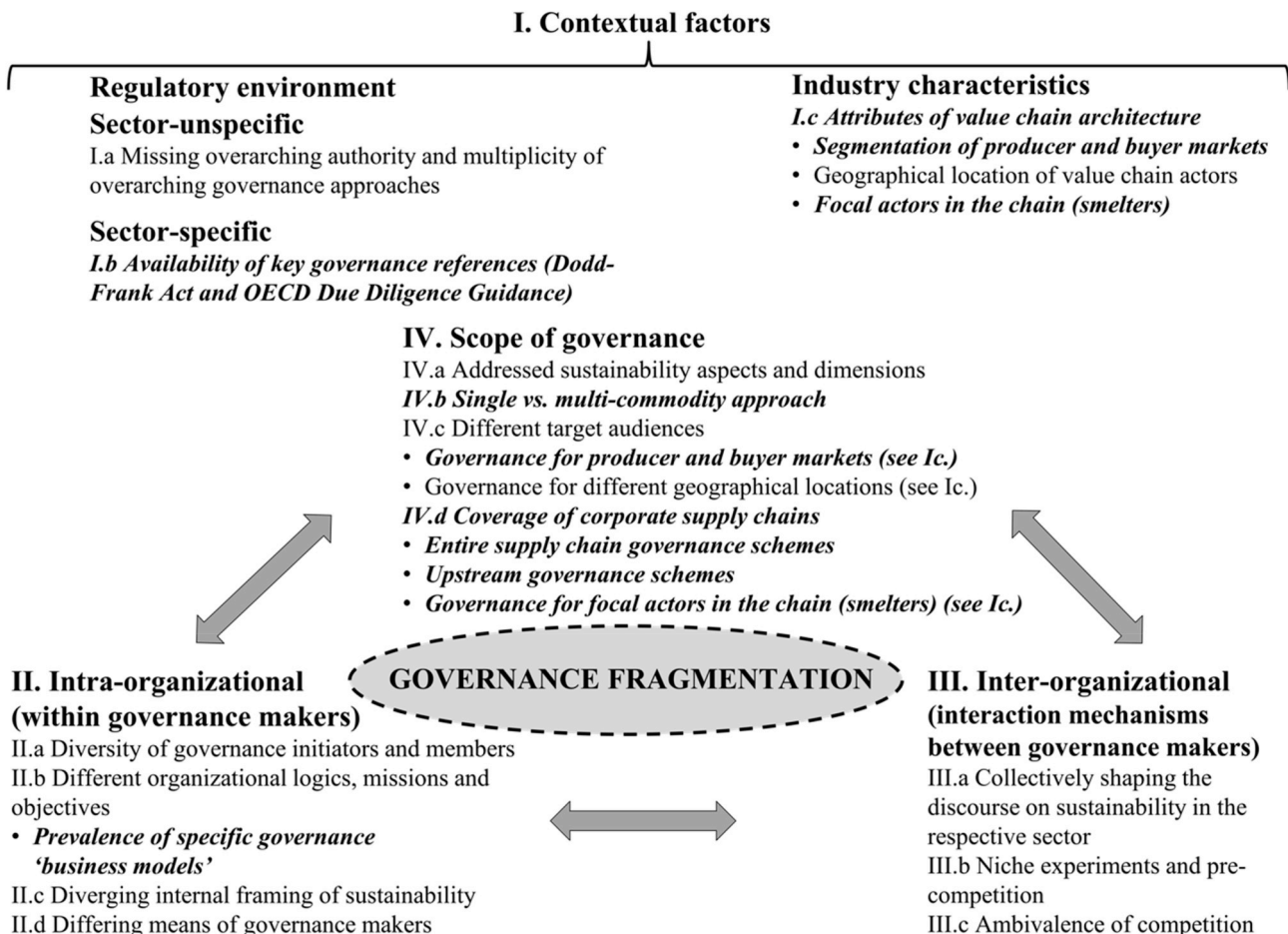


Fig. 2. Conceptual framework of general and gold-specific factors that explain the emergence of multiple sustainability schemes. Explanatory factors that are specific for gold are depicted in italic and bold.

that two key guidelines (Dodd-Frank Act and OECD Guidance) are particularly relevant for sustainability schemes for gold. Researchers introduced the notion of “obligatory passage points” for such key references that governance makers in a certain sector have to comply with in order to gain legitimacy (Dingwerth and Pattberg, 2009; Manning and Reinecke, 2016, p. 625). Interestingly, in the case of gold, a small number of key references does not correlate with a small number of actual sustainability schemes. On the contrary, sustainability governance for gold is provided by a dozen schemes. This might be due to the remaining vagueness and uncovered aspects of both key references, thus allowing sustainability schemes room for interpretation. As sustainability schemes for gold might not find all needed guidance in the OECD Guidance and the Dodd-Frank Act for their specific purpose, they either refer to additional references or create their own guidelines and indicators. Somewhat counterintuitive, the case of gold shows that a small number of key governance guidelines can still result in or support a fragmented governance landscape. Against this background, I argue that the analyzed sustainability schemes build their own ‘portfolio’ or configuration of governance by incorporating different specific and un-specific existing governance references into their own scheme.

5.2. Industry characteristics (I.c)

The commodity gold shows distinct value chain attributes that help explain the prevailing fragmentation of governance. In the particular case of gold, the value chain architecture entails three important aspects: the segmentation of producer and buyer markets, the geographical allocation of value chain actors, as well as the importance of smelters as focal actors. So far, these facets are mainly overlooked by scholars when analyzing the effect of industry characteristics on governance fragmentation (see Manning et al., 2012). Considering the segmentation of producers and buyers in the gold sector, I argue that the segmentation of these market groups can in turn lead to a fragmentation of the affiliated governance approaches. This can be explained by different stakeholder groups at both ends of the gold value chain that have particular governance needs and interests, thus leading to multiple corresponding governance approaches. In the particular case of the gold sector, small-scale and large-scale gold producers have different governance needs on the producing side of the value chain. Similar observations can be found in other commodity sectors (Ponte and Cheyns, 2013; Reinecke et al., 2012; Ruben and Zuniga, 2011), which support my assumption that a segmentation of commodity producer groups can potentially enhance the fragmentation of governance.

Similarly, gold buyers (jewelry sector, industrial applications and financial actors) differ regarding their governance needs. Take the aspect of visibility of the sustainability scheme for the final consumer (see Atkinson and Rosenthal, 2014; Bratt et al., 2011): From a jewelry standpoint, it might matter that the final consumer who is buying a wedding ring virtually sees the label of a sustainability scheme like Fairtrade or Fairmined. In contrast, actors in the financial market require different information from and design of sustainability schemes, as they will have no physical contact with the gold. Given these different buyer segments with specific demands, it is no surprise that the market segmentation of gold has a considerable impact on governance fragmentation.

5.3. Intra-organizational factors (II.a – II.d)

The findings reveal that the composition of governance makers and their organizational logics and missions, internal framing of sustainability as well as objectives and used means considerably vary in the case of gold, thus leading to a fragmentation of sustainability schemes. These findings are in line with previous studies on the emergence of fragmented governance (Bartley, 2007; Dingwerth and Pattberg, 2009; Manning and Reinecke, 2016). Yet, findings from the case study additionally stress the importance of the governance makers’ missions and

‘business models’ (II.b). Depending on the rigor of the organizational mission, governance actors might be more or less willing to cooperate with other governance makers in their sector to align or integrate governance approaches. In other words, the gold case shows that the different missions can resemble key hurdles for the alignment or harmonization of a fragmented governance landscape. Closely related, the individual ‘business model’ of a governance maker, e.g. referring to its particular funding system, can hinder governance makers with similar goals, target audiences and scopes to foster their collaboration or harmonization, as no governance actor sees a benefit in abandoning its business model.

Overall, intra-organizational factors within governance makers resemble unique organizational characteristics. Following this rationale, each governance maker for gold has, from an organizational standpoint, the inherent interest to exist and survive. In particular, the aforementioned aspects (mission and business model) support this argument. Therefore, a fragmentation of governance might emerge and remain in the gold sector due to individual self-interest of governance makers as organizations – despite potential overlaps and synergies on a content level. Adding to this, the intra-organizational factors are rather difficult to change, as they are ‘deeply rooted in the organization’s DNA’. Governance makers, particularly in the case of gold, can face path dependencies (Schreyögg and Sydow, 2011; Sydow et al., 2009; Vergne and Durand, 2011) that might hinder them from a stronger alignment or harmonization of their sustainability schemes.

5.4. Inter-organizational factors (III.a – III.c)

Previous studies suggest that competition can affect the fragmentation or multiplicity of sustainability schemes (Gulbrandsen, 2005; Manning and Reinecke, 2016; Meidinger, 2011; Smith and Fischlein, 2010). Despite its various facets (Bitzer et al., 2012; Smith and Fischlein, 2010), the findings show that governance competition in the case of gold (III.c) is primarily understood as competition over market shares of certified gold. However, this type of competition only plays a minor role when explaining the fragmentation of governance for gold. This can be explained with an overall small market of certified gold, when compared to other commodities where sustainability schemes became an integral part of the mass market (e.g. coffee or cocoa) (Fransen and Kolk, 2007; Glasbergen, 2018; Klooster, 2010; Manning et al., 2012; Millard, 2017). Given the insignificant market share of certified gold, it is no surprise that competition over market shares provides little explanatory power for the fragmentation of governance schemes for gold. As the market for sustainable gold still leaves ample room for expansion, there is little reason to compete in such a small market. Instead, governance makers rather aim to individually expand their market coverage in the overall gold sector.

However, when framing competition in the sense of competing for ideas, meaning and content (Bitzer et al., 2012; Manning and Reinecke, 2016; Smith and Fischlein, 2010), governance competition can be found in the case of gold. Competition thus manifests itself in diverging framings of sustainability and individual objectives and missions of the governance makers, thus rather relating to intra-organizational factors (II.). Additionally, the findings show that governance makers for gold are engaged in collectively shaping the overall discourse on sustainability in the gold sector (III.a) which represents a potential area for competition. Similar to other sectors, the “ambiguity of sustainability as a concept continues to allow competing definitions of sustainability to co-exist and compete” (Manning and Reinecke, 2016, p. 625; Voß et al., 2007) within a single sector, thus leading to a variety of schemes.

Similar to other sectors, governance actors in the gold sector still seem to be in the process of framing a common vocabulary and understanding of sustainability (Bitzer et al., 2008; Higgins and Richards, 2019; Manning and Reinecke, 2016; Reinecke et al., 2012), leading to different sustainability governance schemes in the meanwhile. The case study shows that, particularly in the ‘early days’, different approaches

to shape the discourse on sustainability led to fragmentation, but lost momentum as governance makers started to refer to a common vocabulary and common references.

Similar to other sectors, governance makers for gold often started as niche experiments with little direct contact points in their day-to-day work (De Búrca, Keohane and Sabel, 2014; Manning and Reinecke, 2016; Overdevest and Zeitlin, 2014). While the schemes were acting in their niches on an operational level, they were in contact on a more normative level to jointly discuss the overall basic assumptions of framing sustainability. This phenomenon can also be observed in other sectors beyond the case of gold: According to Reinecke et al. (2012, p. 807), “actors initially cooperate to establish and stabilize a collective identity and then, once the market space [for governance approaches] is established, begin to compete more outwardly (Navis and Glynn, 2010)”. Yet, the findings show that this era is shifting towards a stronger mutual exchange of involved governance actors, thus allowing prospective means to harmonize or align the various sustainability schemes.

5.5. Scope of governance (IV.a – IV.d)

Given the great variety of different sustainability issues affiliated with the extraction, processing and trading of gold, it is no surprise that the content of the identified sustainability schemes considerably differs. Similar to other commodity sectors (de Man and German, 2017; Higgins and Richards, 2019) the scope of governance (Acharya, 2016) varies amongst sustainability schemes in the gold sector: Governance approaches for gold address different dimensions and specific issues of sustainability, thus leading to fragmentation. What is quite unique for gold is the differentiation between a single vs. multi-commodity focus (IV.b) of the involved governance approaches. While some schemes focus on gold (single-commodity), others include a variety of different minerals and metals (multi-commodity). Against this background, I argue that governance makers made a strategic decision to either focus exclusively on gold, or to widen their scope to include other metals and minerals. The latter option might be due to the joint occurrence of different resources at a single mining site, thus fostering sustainability schemes that cover multiple resources. Following this reasoning, one can argue that commodities (like gold) which occur together with other commodities, can be addressed by both resource-specific and resource-unspecific governance approaches.

Furthermore, the case study shows that the variation in supply chain coverage (IV.d) by different sustainability schemes is a key explanatory factor for the resulting governance fragmentation in the case of gold. Based on the specific value chain architecture in the gold sector (I.c), sustainability schemes target different discrete steps of the chain, ranging from an entire coverage to a particular upstream or focal-actor-focus.

6. Concluding remarks, further research and limitations

This study uses a case study approach to explain the emergence of fragmented sustainability governance in the gold sector, particularly focusing on private sustainability governance approaches. In order to do so, the study derived general factors for governance fragmentation from the literature. In a second step, this paper analyzed and discussed the impact of both general and gold-specific factors on the prevailing governance fragmentation for gold. In more detail, I introduced a conceptual framework of general and specific factors that help explain the fragmentation of governance, focusing on contextual factors, intra- and inter-organizational factors as well as the scope of governance.

Going one step further, I used the conceptual framework to structure the discussion and to identify areas of further research.

The five major findings of this study are as follows: First, specific industry characteristics of the gold sector (upstream/downstream as well as producer and buyer markets) create actor-specific governance needs that lead to a multiplicity of corresponding governance schemes. Governance for gold is fragmented regarding different governance needs of producers and buyers as well as different approaches to cover discrete steps of the value chain. Second, the regulatory environment is important: While key governance references exist, they leave room for interpretation and thus encourage or allow the development of multiple sustainability schemes. Third, intra-organizational factors considerably impact the fragmentation of governance for gold, particularly regarding different governance initiators and members, organizational logics, missions and ‘business models’ as well as the framing of sustainability and deduced ends and means of different governance makers. Fourth, the scope of governance strongly explains fragmentation in the case of the gold sector. This entails the different contents of the sustainability schemes for gold and their diverging target audiences and supply chain coverage. Fifth, inversely, interaction mechanisms between governance makers for gold only provide weak explanations for the resulting fragmented governance. Competition in the sense of competition for market shares plays a negligible role when explaining governance fragmentation in the gold sector.

This study suggests further research in the six following areas: First, researchers are encouraged to use the introduced conceptual framework to investigate further commodity sectors beyond the gold sector. Second, considering the category of industry characteristics, the case study revealed the importance of the value chain architecture for the fragmentation of sustainability governance. Further research could therefore elaborate on the impact of different value chain architectures, particularly regarding the segmentation of buyers and producers, on the fragmentation of governance in different commodity sectors. Third, regarding inter-organizational factors, I suggest to consider at least two different dimensions of competition with regard to fragmented governance: competition over market shares and competition over sustainability performance and framing (Bitzer et al., 2012; Smith and Fischlein, 2010). Further research could answer whether there are different dynamics for fragmentation, depending on whether governance makers compete over market shares or over performance and framing. Fourth, regarding the scope of governance, I draw the conclusion from the gold sector that a commodity with blurry system boundaries (like gold) could presumably be more prone to fragmented governance. Therefore, future research could elaborate whether the boundary conditions of a commodity have an impact on the respective degree of governance fragmentation. Fifth, this study derived explanatory factors for governance fragmentation from the literature and from the case study findings. However, additional research is needed to build theories to address the phenomenon of sustainability governance fragmentation and its causal factors. Sixth, while fragmentation of governance might impede the actual impact on addressing sustainability issues, it also resembles a key challenge for corporate actors that are dealing with fragmentation as both governance takers and makers. Understanding the factors behind fragmentation is a prerequisite for companies to thrive in environments of fragmented governance. Further research is needed to assess how companies can successfully maneuver in such landscapes.

This study faces several limitations. First, the qualitative data analysis is not entirely objective. I aimed to overcome this limitation by using a structured coding and analysis process. Second, the findings from the case study are not generalizable to other sectors. Nevertheless,

I am confident that the insights of this study and the introduced conceptual framework refine and expand the scholarly knowledge on fragmented sustainability governance.

Conflicts of interest

The author declares that he has no conflict of interest. The author did not receive any funding for this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.resourpol.2019.101462>.

Appendix

Table A.1
List of abbreviations

Abbreviation	Full name
ARM	Alliance for Responsible Mining
ASM	artisanal and small-scale mining
B2B	business-to-business
CFGS	Conflict-free Gold Standard
CFSP	Conflict-free Smelter Program
CTC	Certified Trading Chains
DRC	Democratic Republic of the Congo
EITI	Extractive Industries Transparency Initiative
EU	European Union
FSC	Forest Stewardship Council
GRI	Global Reporting Initiative
ICMI	International Cyanide Management Institute
ICMM	International Council on Mining & Metals
ID	identifier
IFC	International Finance Corporation
ILO	International Labour Organization
IRMA	Initiative for Responsible Mining
LBMA	London Bullion Market Association
LSM	large-scale mining sector
NGO	nongovernmental organization
OECD	Organisation for Economic Co-operation and Development
PEFC	Programme for the Endorsement of Forest Certification
RCM	Regional Certification Mechanism
RJC	Responsible Jewellery Council
RMAP	Responsible Minerals Assurance Process
RMI	Responsible Minerals Initiative
RQ	research question
RSG	Responsible Silver Guidance
UN	United Nations
WGC	World Gold Council
3T	tin, tungsten and tantalum

Table A.2
Overview of interviewed experts and their affiliation: C (company), G (governance maker), N (NGO), R (research)

ID	Description
C1	Sustainability manager (refiner)
C2	Environmental manager (refiner)
C3	Consultant
C4	Consultant in the extractive industries/ASM gold
C5	Two experts in the gold sector (refiner)
C6	Entrepreneur (gems and jewelry trading)
C7	CFO and sustainability expert (sustainability scheme)
C8	Consultant and researcher
G1	Project manager ASM (sustainability scheme)
G2	Project manager for gold (sustainability scheme)
G3	Program manager ASM (sustainability scheme)
G4	Standards expert (meta governance organization)
G5	Expert from standard setting organization
G6	Expert (sustainability scheme)

(continued on next page)

Table A.2 (continued)

ID	Description
G7	Expert for standard setting (sustainability scheme)
N1	Expert in the gold sector & sustainability certification (NGO)
N2	Expert for extractive industries (NGO)
N3	Expert in the extractive industries (NGO)
N4	Expert for ASM (NGO)
R1	Researcher and expert in the gold sector (governmental agency)
R2	Researcher and expert in the gold sector (governmental agency)
R3	Researcher and expert in the gold sector (governmental agency)
R4	Researcher and expert in the gold sector (university)
R5	Researcher in the gold sector/extractive industries (consultancy)
R6	Senior expert and researcher in the extractive industries (governmental agency)
R7	Researcher and expert in the extractive industries (university)

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9 Paper III: Investigating the Interplay of Companies and Fragmented Sustainability Governance

Paper III: Investigating the interplay of companies and fragmented sustainability governance – using empirical evidence from the gold sector

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Investigating the interplay of companies and fragmented sustainability governance – using empirical evidence from the gold sector

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ABSTRACT: Business firms that aim to take responsibility along their value chain are often confronted with a fragmentation of sustainability governance. Additionally, companies, in their role as political actors, are increasingly involved in the finding and implementing of sustainability governance approaches. This article addresses the question how companies affect and are affected by different manifestations of fragmented sustainability governance in the empirical case of the global gold sector. Building on 26 comprehensive expert interviews and conceptual reasoning, a more nuanced assessment of the interplay of companies and fragmented governance at the stages of rule-finding, rule-setting, and rule-following, is provided. A conceptual framework is introduced that distinguishes three manifestations of governance fragmentation and their interactions with companies: multiplicity, specialization, and dissipation. This study contributes to the discussion on the political role of the business firm and likewise provides stimulus for business management scholars and practitioners dealing with the phenomenon of governance fragmentation.

KEY WORDS: political role of the firm, private governance, fragmentation, sustainability, gold sector, value chain responsibility

I use the Chicago Manual of Style 17th edition (author-date).

In times of shifting societal expectations about the corporate license to operate and its legitimacy to do business, the business firm is increasingly pressured by its stakeholders to proactively cope with sustainability challenges (den Hond and de Bakker 2007; Scherer and Palazzo 2011, 2007; Doh and Guay 2006) and take value chain responsibility (VCR). In order to do so, an adequate regulatory environment is needed (Newig, Voß, and Monstadt 2007; Voß and Bornemann 2011; Mena and Palazzo 2012). While different research streams exist to frame such regulatory environment, I refer to the notion of governance in this article. For the remainder of this study, I follow the understanding of governance as “the means by which to infuse *order*, thereby to mitigate *conflict* and realize *mutual gains*” introduced by Williamson (2010, 674 emphasis in original).

Nation states are historically considered the primary actor to provide governance to set the ‘rules of the game’ for companies to do business and eventually cope with sustainability challenges (Scherer, Palazzo, and Matten 2009; Matten and Crane 2005; de Bakker, Rasche, and Ponte 2019). In reality, a lack of governance or insufficient governance arrangements, often referred to as governance gaps or voids, exist (Rasche 2012; Roberts 2013; Scherer, Palazzo, and Matten 2014; Whelan 2012; Mena and Palazzo 2012; Santoro 2010). This development is often linked to the globalization and complexity of corporate business activities which are only insufficiently regulated by regionally constrained and increasingly weak nation states (Whelan 2012; Scherer and Palazzo 2008; van Oosterhout 2010; Mena and Palazzo 2012; Scherer and Palazzo 2007; Santoro 2010).

As a consequence, the role of the state as the only governance provider is increasingly challenged by new governance actors that see a need (or an opportunity) to serve as governance makers (Scherer and Palazzo 2011; Ruggie 2004; Fransen and Conzelmann 2015; Grabs 2018; Scherer, Palazzo, and Matten 2009; Detomasi 2007; van Oosterhout 2010; de Bakker, Rasche, and Ponte 2019). Therefore, a great variety of new governance actors emerged in the last

decades (Scherer, Palazzo, and Baumann 2006; Abbott and Snidal 2010; Kalfagianni and Pattberg 2013). This includes above all civil society and corporate actors. These new governance actors now “increasingly participate in the formulation and implementation of rules in policy areas that were once the sole responsibility of the state or international governmental organizations” (Scherer, Palazzo, and Baumann 2006, 506).

As governance to address sustainability challenges in a corporate value chain context is increasingly provided by a rising quantity and variety of governance approaches, scholars employ the notion of ‘governance fragmentation’ (Pattberg and Widerberg 2015; Pattberg et al. 2014; Acharya 2016; Biermann et al. 2009; Heidingsfelder and Beckmann 2019). Essentially, fragmentation of governance can refer to the variety (and multiplicity) of governance actors, the different applied means of implementing and enforcing rules, the thematic focus and scope as well as the location of applicability (Heidingsfelder 2019). Given this wide understanding of governance fragmentation, fragmentation is not a monolithic concept, but rather shows different manifestations (Heidingsfelder and Beckmann 2019).

Following this line of thought, companies are evidentially affected by fragmented governance: Corporate actors oftentimes act in landscapes of fragmented sustainability governance when doing business and creating value (Heidingsfelder and Beckmann 2019; Zeyen, Beckmann, and Wolters 2016). In the words of Scherer et al. (2009, 327), companies increasingly “operate in a complex and uncertain [regulatory] environment with gaps in regulation and ill-defined rules of appropriate business conduct (Scherer & Palazzo, 2008[...])”. This fragmentation of sustainability governance raises manifold questions for the involved and/or affected companies: Which governance instruments and rules are applicable for the respective company? How can companies navigate in a complex realm of fragmented sustainability governance? How can they minimize their efforts, e.g. in the form of search costs, to deal with fragmented governance? In real-life, the phenomenon of sustainability governance

fragmentation inter alia occurs in the textile and agriculture industries (Fransen 2011; Schouten and Bitzer 2015) and is currently a prominent topic in the global gold sector (Heidingsfelder 2019).

Against this background, I introduce my overarching research question: *How do companies affect and are affected by different manifestations of fragmented sustainability governance in the case of governance for gold?* In order to answer this research question, I proceed in five steps: First, I elaborate on the dual-role of companies as governance makers and takers (Schultze 2003; Jinnah 2017; Scherer, Palazzo, and Matten 2014; Sundaram and Inkpen 2004) in environments of fragmented sustainability governance. As a searchlight to guide my analysis of the interplay of companies and fragmented sustainability governance, I use the three-tiered ordonomic framework by Pies and colleagues (Pies, Beckmann, and Hielscher 2014, 2010). Second, I briefly introduce my methodology, consisting of expert interviews in the gold sector and a secondary data analysis. Furthermore, I provide a short description of the current state of fragmented sustainability governance for gold. In a third step, I then use the theoretical insights and the three-tiered framework to analyze the empirical findings. Building on this, I discuss the interplay of companies with different manifestations of governance fragmentation and derive implications for business management. I support the discussion by introducing a conceptual framework of different manifestations of sustainability governance fragmentation. The article closes with some concluding remarks and suggestions for further research.

COMPANIES AS GOVERNANCE TAKERS AND MAKERS

In order to understand the interplay of companies and fragmented sustainability governance, I make a fundamental distinction between companies as governance *takers* and *makers* (Eberlein et al. 2014; Beckmann, Hielscher, and Pies 2014). First, companies are traditionally governance

takers as they operate their business within the given rules and regulatory environment(s) provided by nation states, governmental agencies, and institutions (Scherer, Palazzo, and Matten 2014; Mena and Palazzo 2012; Kobrin 2009). Second, companies are increasingly engaged as novel governance *makers*, as they participate in finding and implementing the rules to steer their business operations (Pies, Beckmann, and Hielscher 2014; Scherer, Palazzo, and Matten 2014, 2009; Detomasi 2007; van Oosterhout 2010; Mena and Palazzo 2012).

As governance takers, companies are considered as being “apolitical and primarily concerned with regulatory compliance” (Lawton, McGuire, and Rajwani 2013, 87; Fuchs and Lederer 2007). In this role, companies need to follow the ‘rules of the game’ provided by nation states and other governmental bodies when conducting their business operations (Beckmann, Hielscher, and Pies 2014).

From the perspective of companies as governance takers, the fragmentation of (sustainability) governance implies considerable challenges for companies. Overall, fragmentation often comes with a rather negative connotation in the scholarly literature, given its apparent pitfalls such as increasing complexity, competition over legitimacy and authority, increased transaction costs, uncertainty, confusion for involved actors, and regulatory overlaps (Held and Young 2013; Zelli and Asselt 2013; Karlsson-Vinkhuyzen and McGee 2013; Hospes, van der Valk, and van der Mheen-Sluijer 2012; Bitzer, Francken, and Glasbergen 2008; Smith and Fischlein 2010). From a corporate perspective, companies can face negative consequences of fragmented sustainability governance: Regarding the real-life effects of fragmented governance, it can cause confusion for companies and their customers, increase the complexity of handling transactions along the value chain, and require the engagement and resources of involved companies, eventually leading to higher costs and coordination efforts (Turcotte, Reinecke, and Hond 2014; Fransen 2011). Furthermore, companies might face orientation issues in business environments characterized by fragmented governance. Rather than dealing

with concise and stringent rules, companies are confronted by an overwhelming (and potentially contradicting) offer of hard and soft law approaches (Mena and Palazzo 2012; Rasche 2012; Heidingsfelder and Beckmann 2019). Companies in their role as governance takers must therefore find answers to deal with negative effects of fragmented sustainability governance when taking value chain responsibility.

More recently, the notion of companies as (potential) governance makers gained increasing attention, particularly in the wider scholarly discussion on the political role of the business firm (Whelan 2012; Scherer, Palazzo, and Matten 2009; Rasche 2012; van Oosterhout 2010; Pies, Beckmann, and Hielscher 2014; Mena and Palazzo 2012; Kobrin 2009; Scherer and Palazzo 2007). In this regard, such a political role encompasses inter alia the provision of public goods (e.g. health care, education, public infrastructure) by companies (Whelan 2012; Kobrin 2009; Matten and Crane 2005), collective and individual self-regulation (Néron and Norman 2008; Rasche 2012; van Oosterhout 2010; Mena and Palazzo 2012; Beckmann, Hielscher, and Pies 2014) as well as political lobbying for or against governmental regulations (Scherer, Palazzo, and Matten 2009; Lawton, McGuire, and Rajwani 2013).

In this article, I primarily refer to corporations as political actors when being proactively involved in collectively and/or individually shaping, implementing, and potentially enforcing regulation, thus functioning as governance makers. Referring back to the introduced understanding of governance, companies, as (new) political actors, are thus proactively engaged in finding, implementing, and enforcing adequate instruments to “infuse order” in order to “mitigate conflict and realize mutual gains” (Williamson 2010, 674). Or, following Pies et al. (2014, 252), companies “take a political role as soon as they [...] participate [...] in rule-setting processes and rule-finding discourses”. Following this rationale, companies are not exclusively governance takers, but, often simultaneously, also proactive governance *makers*. In more concrete terms, companies can use various approaches to engage in the political arena as

governance makers and political actors. This includes, but is not limited to, the participation in multi-stakeholder-initiatives (MSIs) (Zeyen, Beckmann, and Wolters 2016; de Bakker, Rasche, and Ponte 2019; Rasche 2012) and the establishment of codes of conduct to provide guidance along the firm's value chain (Mena and Palazzo 2012; van Tulder and Kolk 2001; Waddock 2017).

Taking the perspective of companies as political actors and, more precisely, governance makers, I suggest that the interplay of companies and fragmented governance needs a more nuanced assessment. Taking for granted that companies are governance makers, they might influence the resulting fragmentation of governance that characterizes their regulatory environment (Heidingsfelder and Beckmann 2019). Following this rationale, new questions emerge regarding the relationship of companies and fragmented governance: On the one hand, companies can proactively shape the resulting governance landscape they are operating in when doing business and taking VCR. Although few in numbers, some studies highlight potential benefits of fragmented governance such as innovation through governance experiments, flexibility, and adaptability, competition over best practices as well as avoiding monopolistic structures of governance makers (Widerberg and Pattberg 2015; Keohane and Victor 2011). On the other hand, one can argue that the existing and prevailing fragmentation of governance might partly be triggered by companies functioning as governance makers. As companies increasingly act as governance makers, the number and diversity of governance approaches might rise (see Waddock 2017; de Bakker, Rasche, and Ponte 2019).

In a nutshell, I argue that prevailing fragmented governance landscapes resemble an important field of business and management research in light of the greater debate on the political role and responsibility of companies along globalized value chains. Furthermore, companies that are confronted with (as governance takers) and potentially shaping (as governance makers) fragmented governance when aiming to take value chain responsibility,

need practical guidance. However, the many shades of interplay of companies and fragmented sustainability governance are only starting to gain scholarly attention (Heidingsfelder and Beckmann 2019). Therefore, I further assess the interplay of companies and fragmented sustainability governance in the following sections. In order to do so, I focus on companies in an environment of fragmented sustainability governance in the empirical case of the global gold sector. To structure the data analysis and conceptual reasoning, I refer to the three-tiered conceptual framework by Pies, Hielscher, and Beckmann (2009; 2010, 2014).

THE THREE-TIERED ORDONOMIC FRAMEWORK

In order to analyze the interplay of companies with fragmented governance in a more nuanced manner, I use the three-tiered ordonomic framework introduced by Pies, Beckmann and Hielscher (2009; 2010, 2014)¹. It suggests that companies are “not only [...] economic actors, but also [...] political and civil society actors” (Pies, Beckmann, and Hielscher 2010, 275). Starting from this perspective, Pies and colleagues further differentiate the role of companies when aiming to take responsibility for their business activities. They argue that companies can be engaged in three ways: the “basic game of business conduct”, the meta game of rule-setting, and the meta-meta game of “rule-finding discourse” (Pies, Hielscher, and Beckmann 2009, 385). Figure 1 illustrates these three stages.

¹ For a detailed introduction to the ordonomic approach and its link to governance and the political role of the business firm see Pies et al. (2009).

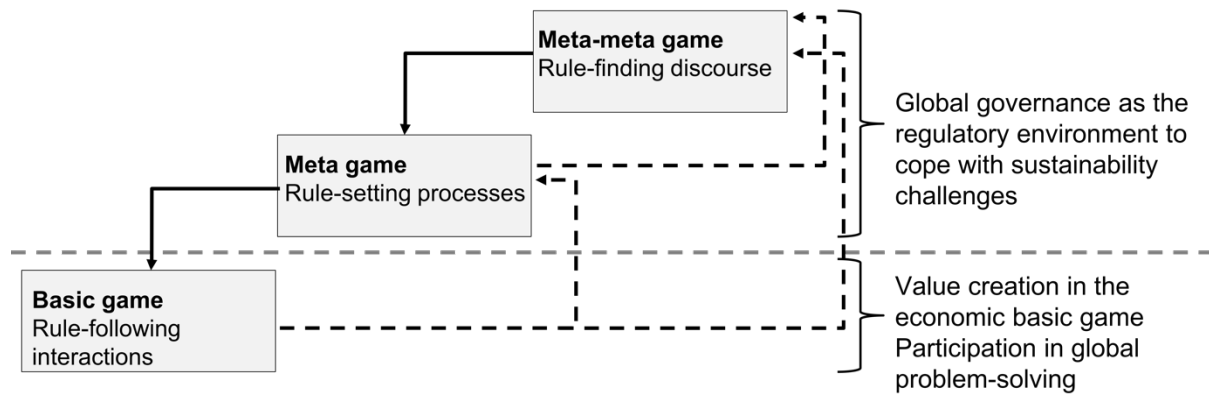


Figure 1: Three-tiered Conceptual Framework in the Context of Sustainability Governance. Own Depiction
Based on Pies et al. (2014, 231, 2010, 274)

Basic Game

First and foremost, companies are taking care of their business activities in the “basic game of business conduct” (Pies, Hielscher, and Beckmann 2009, 385). Here, companies aim to optimize and increase their value creation capabilities in given regulatory circumstances. Regarding sustainability challenges and value chain responsibility, it is the basic game where companies directly affect or are affected by sustainability challenges. Through their value creation activities in the basic game, companies might simultaneously create undesirable negative environmental, social, and economic effects along their value chains (Busse et al. 2017; Kovács 2008; Letizia and Hendrikse 2016; Schrempf-Stirling and Palazzo 2016). However, it is also the basic game where companies can operationalize and implement corporate practices to prevent, minimize, or eliminate sustainability challenges, thus allowing the firm to take value chain responsibility. The extent to which companies can thrive in the basic game (successfully create value and take value chain responsibility) fundamentally depends on the given regulatory environment (governance).

Meta Game

In the meta game, the respective rules to steer interaction and cooperation in the basic game are set (Pies, Beckmann, and Hielscher 2014, 232). It thus serves as an arena to shape the regulatory environment for business to do business and address sustainability challenges. According to Pies et al. (2009, 386), the meta game is necessary to establish “internal rule-setting, e.g., corporate codes of conduct, as well as external rule-setting, e.g., social or environmental standards”. Coming back to sustainability and corporate value chain responsibility, the meta game is crucial to form adequate governance instruments that enable (or force) the business firm to take responsibility in the basic game.

Meta-Meta Game

The meta-meta game refers to “rule-finding”, where involved actors engage in a discourse on what should be governed (Pies, Beckmann, and Hielscher 2014, 246) and serves to “identify common rule-interests” (Pies, Hielscher, and Beckmann 2009, 394). Through discussion, different actor groups collectively decide on issues that require governance, thus triggering rule setting in the meta game and impacting the way companies interact in the basic game. According to Pies et al. (2009, 386f), the discourse in the meta-meta game is steered by internal and external discussions, e.g. referring to corporate culture (internal), and “multi-stakeholder dialogue[s] or [...] business roundtable[s]” (external).

In a nutshell, the three-tiered framework points out that companies, in their role as political actors, are (potentially) engaged in the finding (meta-meta game) and setting (meta game) of governance rules, thus creating the regulatory environment for doing business and addressing sustainability challenges (basic game). While the framework by Pies and colleagues offers a valuable starting point to assess the interplay of companies and governance, so far it does not incorporate the aspect of governance fragmentation. Therefore, I expand the

framework in the following analysis by a) emphasizing the nuanced role of companies as both governance takers and makers and b) incorporating the aspect of different manifestations of fragmented governance. In order to do so, I refer to the empirical case of fragmented sustainability governance in the gold sector.

METHODOLOGY: EXPERT INTERVIEWS AND ANALYSIS OF SECONDARY DATA

As its main data source, this article draws on 26 semi-structured expert interviews with different actors from the gold sector, including company representatives and other parties (NGOs, researchers, governance initiative representatives, etc.). A unique ID was assigned to each interviewee (see Table 1 in the Appendix). The semi-structured interviews took place between November 2017 and April 2018. On average, they lasted 65 minutes. The interviews allow me to focus on the actor perspective of companies in a landscape of fragmented sustainability governance in the empirical case of the global gold sector. Using the software MAXQDA, the transcribed interviews were manually coded in an inductive and three-step procedure. Additional secondary data (e.g. corporate websites and freely accessible documents of sustainability schemes²) were incorporated and analyzed.

THE INTERPLAY OF COMPANIES AND FRAGMENTED SUSTAINABILITY GOVERNANCE IN THE GOLD SECTOR

In this section, I provide a nuanced assessment of the interplay of companies in a landscape of fragmented sustainability governance in the case of the global gold sector. I start my analysis with a brief overview of sustainability governance in the gold sector. Then, I use the three-

² I apply the notion of sustainability schemes to summarize different governance instruments (standards, principles, etc.).

tiered framework to further analyze and contextualize the role of companies as governance makers and takers in the context of fragmented sustainability governance for gold.

In the last two decades, a multiplicity of sustainability schemes emerged for metals and minerals, and in particular for gold (Kickler et al. 2018; Young, Zhe, and Dias 2014; Mori Junior, Sturman, and Imbrogiano 2017; Heidingsfelder 2019). These sustainability schemes aim to tackle sustainability challenges associated with the mining, refining, and trading of gold. Taking a closer look at the gold case, eleven sustainability schemes³ are particularly important (Heidingsfelder 2019). Furthermore, numerous private and governmental governance setters exist in the gold sector with the aim to introduce sustainability governance mechanisms.

As the focus of this article is on the interactions between fragmented sustainability governance and corporate actors, I do not dive deeper into the particularities of the gold sector, e.g. regarding its specific sustainability challenges (Mudd 2007; Andrews 2016; Young 2018) and its sectoral arrangement of artisanal and small scale mining (ASM) and (large scale) industrial mining actors (Childs 2014; Armah, Luginaah, and Odoi 2013). However, I want to emphasize that the boundaries between gold and other metals and minerals are not always clear-cut. Although the focus of this article is on gold, I will inevitably refer to the extractive industries in general at some points.

In the following sections, I use the introduced three-tiered framework to analyze the interplay of companies with fragmented sustainability governance in the empirical case of the gold sector. In more detail, the interplay of companies as both governance takers and makers with regard to fragmented governance is assessed at each of the three stages of the framework.

³ Important sustainability schemes and actors for gold are inter alia the “Initiative for Responsible Mining (IRMA), the International Council on Mining & Metals (ICMM), the International Cyanide Management Institute (ICMI), the London Bullion Market Association (LBMA), the World Gold Council (WGC), the Responsible Minerals Initiative (RMI), the Responsible Jewellery Council (RJC), the Alliance for Responsible Mining (ARM), Fairtrade International, as well as the Regional Certification Mechanism (RCM), and the Certified Trading Chains (CTC)” (Heidingsfelder 2019, 4)

Figure 2 shows the condensed findings. In the following sections, I further elaborate on each aspect in greater detail, starting with the meta-meta game.

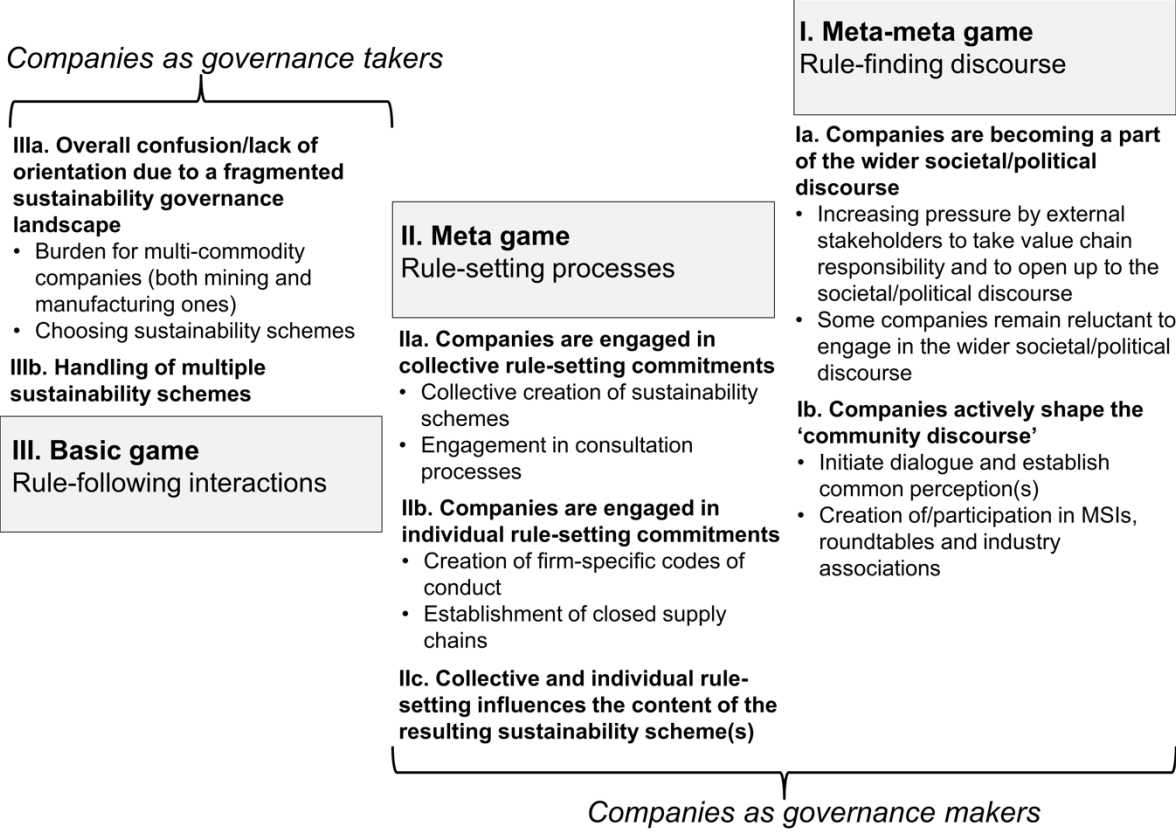


Figure 2: Categorization of Corporate Activities in Their Roles as Governance Makers and Takers at Different Stages of the Three-tiered Conceptual Framework in the Empirical Case of the Global Gold Sector. Own Depiction Based on Pies et al. (2014, 231, 2010, 274)

Companies and Fragmented Governance in the Meta-Meta Game

The three-tiered framework suggests that companies as political actors can be engaged in the societal/political discourse (meta-meta game). Yet, the empirical findings provide a more nuanced picture of the engagement of companies as governance *makers* in the meta-meta game. As an important differentiation, I distinguish between two discourse arenas in the meta-meta game of rule-finding based on the empirical data in the gold sector: the wider societal/political discourse and the community discourse. While the wider societal/political discourse refers to a great variety of actors primarily beyond the actual gold and extractive industries, the

community discourse refers to actors that are strongly involved in and/or affected by the gold value chain, e.g. including mining companies, ASM miners, traders, downstream manufacturers, supply and service companies, downstream buyers, etc. Although there are certainly overlaps and interlinkages between these discourse arenas, this differentiation helps to guide the analysis.

Given these two arenas, I find that companies in the case of gold play a different role in each discourse. While I find evidence that companies in the gold sector are actively engaged in the community discourse, they are (willingly or not) becoming a part of the wider societal/political discourse. I substantiate this claim in the following sections.

The findings suggest that companies engage in the meta-meta game in different ways. First, regarding a larger societal or political debate on sustainability in the gold and extractive industries, I found that companies are only to some extent engaged here. When looking at the greater societal and political debate, the data suggest that companies are rather pressured by third parties (NGOs, media, consumers) to act and put sustainability topics on their corporate agenda than proactively picking up sustainability topics. Second, rather than being involved in the wider societal and political debate, companies are very well engaged in the meta-meta game, but more so with regard to shaping the ‘community debate’ of relevant actors in the gold and extractive industries.

Ia. Companies are Becoming a Part of the Wider Societal/Political Discourse

The findings suggest that in the case of governance for gold, corporate actors are passively becoming part of the societal/political discourse. Instead of proactively shaping the discourse with external stakeholder groups, companies are rather facing pressure by third parties to include sustainable practices in their business operations and to engage in the debate. This pressure to a) take value chain responsibility and b) engage in a wider societal/political debate,

is primarily coming from external stakeholders such as civil society, the media, governments, and investors.

In more detail, the findings show an increasing pressure by external stakeholders to take value chain responsibility and to open up to the societal/political discourse. Willingly or not, companies are becoming part of the wider societal/political discourse (meta-meta game). The findings suggest that companies are becoming the object of the societal/political discourse, rather than being a strong contributing factor. I found indications that companies feel an increasing external pressure to implement more sustainable practices along their business operations. Furthermore, I found that companies are increasingly pilloried by external stakeholder groups:

“[Companies] have [a] reputational risk ... globally Canadian mining companies are being tagged more and more by civil society with this accountability, because so many mining companies are based on the Canadian stock exchange.” S7

Overall, I witness a trend of the gold and extractive industries to open up to stakeholders and to engage in political/societal discussions. This trend of opening up and taking responsibility for the conditions in the gold and extractive industries can be explained by external pressure from civil society, the media and governmental bodies (Horowitz 2006, 307; Hodge 1987; Jenkins and Yakovleva 2006). Sustainability challenges associated with gold in particular (and extractive resources in general) were picked up by civil society organizations and the media alike, resulting in e.g. the ‘No Dirty Gold’ campaign in 2004 (Earthworks 2004). This development in the gold sector is in line with indications that the overall extractive industries are transforming from being a ‘black box’ several decades ago towards more transparent industries (David-Barrett and Okamura 2016; Haufler 2010; Öge 2016; Corrigan 2014). The findings suggest that the pressure from stakeholders (primarily considering the

downstream part of the value chain) steadily increased in the last years to engage in governance and change practices towards more sustainable pathways:

“If you go back two years, then the pull from the downstream user was a lot less than it is now. [...] There is increasingly a voice to make sure for the downstream users whether as an individual or as an organization that says: ‘We want to source everything responsibly’.” S5

Based on the empirical findings, the main impetus to bring about change and engage in the rule-finding discourse is coming from external stakeholders. Companies in the gold sector are pressured to open up to the societal/political discourse, as companies and their practices are becoming the object of the societal/political discourse. According to the interview partners, the pressure to a) implement more sustainable practices and b) open up to the wider societal discourse is particularly coming from the following parties: investors, final buyers of gold (containing) products, media, civil society, and governments. In the words of one interviewee:

“Responsible practices are important to cover the entire supply chain. I think there is an expectation from investors and increasingly consumers around responsible business behaviors.” B7

Regarding investors:

“Another really important aspect of bringing change [to the gold industry] is the pressure from the investment sector! They are more and more pressuring companies to function in a responsible way. When the investors take this role, [the] mining companies have no choice but to listen! That’s really important to bring change to the industry.” S6

Due to this increasing external pressure, the previously opaque activities of (mining) companies in the gold sector gained visibility as stakeholders call for transparency. In particular, mining operations are becoming visible to the purchasers and final consumers. This

new (forced) transparency puts the involved companies of the gold value chain in the spotlight of a wider societal/political discourse:

“[M]ining has operated far less visibly than the other [...] industries. [...] The supply chain has been so complex and the mines have been able to be relatively invisible, that's less true now. And so now [the mining companies] say: ‘Okay, we are more visible. And our purchasers are saying: We are going to make you more visible [...]’.” S7

And further:

“I think we are seeing a huge change simply around the issue of transparency. Transparency used to be scary and frightening alone, and we wanted to avoid it [...]. Some actors were really wanting to avoid it [...]. And instead, this idea [emerged] that transparency for many of these [mining] sites can be their friend, rather than being afraid to have the dialogue.” S7

Nevertheless, the findings also show that some companies remain reluctant to engage in the wider societal/political discourse. Despite the outlined stakeholder pressure to become a part of the wider societal/political discourse, the findings suggest that some companies are still reluctant to engage in a rule-finding discourse. Following the insights from the interviews, this can partly be explained by the ‘tradition’ of the mining sector (thus including the gold sector) as being a ‘black box’ and being nontransparent. Although the societal/political discourse gained momentum in the last decades, some companies refused (and still refuse) to engage in this discourse and refrain from more transparent business operations. Engaging here would mean that companies are aware of their responsibility and are willing to step into the societal/political arena. One expert summarizes this as follows:

“The mining industry got caught up in [...] criticism. The environmental rules were changing. Within about a decade, new legislation on air quality, all sorts of things related

to the environment [came up]. Because people were woken up to the fact that we need to protect the environment. The mining industry was caught and fought! They said: ‘This is wrong! Why don’t you just let us do what we are good at?’ And they came across as dinosaurs. And some still do ... but like always, there are leaders and laggards.” S6

And in the words of one sustainability scheme representative:

“[...] there will be some [companies] who continue to resist, who say: ‘We already do enough. We are already over-audited. [...] Why do [we] need to do this? Do you know how much [we] do already? We are trying so hard’. And then I say to them: ‘Okay. And if I say to a room full of all of you, those of you who are running the irresponsible mines, will you please raise your hand?’. And no one is going to raise their hand, right? ‘And yet each of you know that some of your colleagues are not running the same [responsible] operations that you yourself would do’.” S7

Ib. Companies Actively Shape the ‘Community Discourse’

In contrast to the societal/political discourse, many companies in the gold sector are now strongly engaged as proactive governance makers in the community discourse, where they aim to create sustainability governance mechanisms together with their peers.

The findings highlight the importance of initiating dialogue and establishing common perceptions within the community discourse. Companies are increasingly engaged in the community discourse as a part of the meta-meta game as governance makers and impact the discourse for governance in order to address sustainability challenges related to gold. Oftentimes, companies use intermediaries like industry associations to indirectly engage as governance makers. In particular, the International Council on Mining & Metals (ICMM) plays an important role here. In the community discourse, companies, together with other community

members, initiate dialogue in order to establish common perceptions of the matter at hand regarding sustainability in the case of gold and the extractive industries. This is particularly achieved via industry meetings, roundtables, and increasingly conferences on the topic of VCR, governance, and gold. Industry associations such as the ICMM play an important role as a sort of intermediary or catalyst to intensify dialogue within the community on sustainability and responsibility in the industry. According to one interviewee:

“ICMM plays an incredibly important role in the world at defining leadership amongst the globe's largest mining companies set up in particular to deal with addressing some of these questions [of] responsible practices, but its entire membership, of course, is the mining industry [...].” S7

Furthermore, in the case of the gold sector, the creation of and/or participation in MSIs, roundtables, and industry associations plays an important role. The findings further show that companies as governance makers in the meta-meta game can be involved in two important mechanisms: the creation of platforms for mutual exchange within the community and/or the active participation in such platforms.

First, companies can create multi-stakeholder-initiatives, roundtables, and industry associations in order to provide platforms for exchange, thus allowing sustainability topics to be discussed. As an important note, I need to emphasize that some of these MSIs are rather exclusive (or implicitly exclusive) for companies, while others aim for a more diverse membership (see Zeyen, Beckmann, and Wolters 2016; see de Bakker, Rasche, and Ponte 2019). In the case of gold, there are some governance initiatives and platforms that are primarily composed of corporate actors. This can particularly be seen in the case of the industry association ICMM – although it does not only cover gold – and the World Gold Council (WGC). While the ICMM entails mining and metals companies, and further industry associations, the WGC consists of major gold mining companies. In a similar fashion, the

Responsible Jewellery Council (RJC) was established by diamond and jewelry companies. Corporate actors use these institutionalized platforms or arenas to further steer the community discourse with key actors of the gold and extractive industries. While these platforms offer opportunities for a narrow community discourse, they hold the pitfall of being or becoming an exclusive club of corporate actors – thus potentially hindering exchange with external stakeholder groups and the wider societal discourse. Nevertheless, companies are also engaged in or founding platforms and organizations that allow a more diverse composition of actors, thus including e.g. NGOs, labor unions, etc. This can e.g. be seen at the multi-stakeholder Initiative for Responsible Mining Assurance (IRMA), where businesses were actively engaged in the founding and development stages.

Second, companies are actively engaged in such multi-stakeholder platforms (with or without being the ones who established them). Whether such platforms are ‘closed clubs’ for companies only or factual MSIs, companies can be engaged as governance makers in such platforms. Against this background, these manifold discourse arenas resemble important instruments and locations for the community discourse.

Companies and Fragmented Governance in the Meta Game

Following the conceptual foundations of this paper, I now highlight the role of companies as governance *makers* in the meta game. More precisely, the findings suggest that companies as governance makers are both engaged in collective as well as individual rule-setting. By doing so, they can shape the content of sustainability-related governance instruments depending on their governance needs and preferences.

IIa. Companies are Engaged in Collective Rule-Setting Commitments

The findings suggest that companies as *collective* rule-setters are especially involved in two activities: the creation of sustainability schemes and/or the engagement in consultation processes.

First, the findings show that companies are involved in the collective creation of sustainability schemes. As previously highlighted, companies in the meta-meta game are engaged in governance initiatives and platforms such as MSIs as a means and location for the community discourse. In the meta game, companies then use these governance initiatives to create and implement sustainability schemes. Similar to the differentiation of ‘company exclusive’ and multi-stakeholder governance initiatives (see Ib.), sustainability schemes can be created in the meta game with or without the involvement of non-corporate actors. Considering the first category (involvement of non-corporate actors), the Initiative for Responsible Mining with its IRMA standard is a good example, as it was developed with various different actor groups through a participatory process. Regarding the latter (no or little involvement of non-corporate actors), the WGC and its Conflict-Free Gold Standard (CFGS) can be mentioned. Here, companies are the main actors to determine the content of the sustainability scheme.

Second, companies in the gold sector are engaged in consultation processes. As governance makers, companies in the gold and extractive industries are actively involved in determining the criteria of governance instruments (e.g. standards or guidelines). As companies will be the ones who use governance instruments in the basic game, it makes eminent sense for them to be engaged in determining the criteria and content of governance in the meta game. By doing so, companies bring in their expertise and have the opportunity to shape governance instruments according to their governance needs. One company representative describes the involvement of his firm in governance consultations as follows:

“[...] We have good contacts with the responsible people at the [Responsible Minerals Initiative (RMI)]. So, if they aim to create a new standard, they send us a draft upfront and then I provide feedback. They are very thankful if someone from corporate practice says: ‘Guys, I like the idea, but it is not feasible in [corporate] practice’. We are integrated here. This works very well with the RMI. And similarly, with [the London Bullion Market Association] LBMA. They have a grievance mechanism in place. So, we can either say: ‘This is going too far’, or: ‘This doesn’t go far enough’. And we are actively engaged here.” B2

Iib. Companies are Engaged in Individual Rule-Setting Commitments

In addition to or instead of collective approaches, some companies in the gold and extractives sector prefer to apply *individual* rule-setting commitments in the form of company-specific codes of conduct or standards, or by implementing closed supply chains with specific regulatory aspects.

The results highlight that firms create firm-specific codes of conduct in the gold sector. In addition to the existing sustainability schemes and initiatives, some companies have their own standards and guidelines. For instance, “the Kering jewelry group has its own standard, the ‘Kering standard’⁴ for jewelry and gold. [...] Yet, if different jewelry companies have their own standards [...], then the situation is becoming more and more confusing! [...] And eventually nobody will be able to judge these standards.” (B1).

Closely related, companies establish closed supply chains in the realm of the gold sector. Some mining and downstream manufacturing companies, particularly jewelry companies, establish closed supply chains as an individual governance approach. A few pioneer companies (jewelry companies, gold smiths, and jewelry traders) started to use closed supply chains either

⁴ Full name: Kering standards for raw materials and manufacturing processes (Kering 2017).

before a larger discussion on sustainability governance for gold gained momentum, or in the wake of this development. One pioneer in this regard is Fair Trade in Gems and Jewelry that aims to “establish the fair trade of precious metals and gemstones” (Siepelmeyer 2004, para. 4). According to one interviewee, Fair Trade in Gems and Jewelry “has its cooperatives in Northern Argentina and they produce and deliver a few goldsmiths that manufacture their products with this gold [...] and thereby have a closed supply chain.” (B4). In order to set the regulatory framework for its closed supply chain, Fair Trade in Gems and Jewelry created its own criteria for gold mining and trading which regulates e.g. labor conditions and environmental aspects (Siepelmeyer, n.d.). Following this pioneer approach, several goldsmiths adopted similar closed supply chains, thus setting their own governance regulations for implementing more sustainable practices in their supply chains. As an example for larger companies that experiment with individual rule-setting approaches, the jewelry brand Tiffany & Co. can be mentioned. As a governance maker in the meta-game, Tiffany introduced a company-specific code of conduct for its suppliers in order to take value chain responsibility. More specifically, Tiffany claims that:

“We source the majority of our rough diamonds and metals directly from mines we know and from recycled sources. We are devoted to better understanding the social, economic and environmental impact of the mining and processing of precious materials so that we can create positive change along the supply chain, all the way from the mine to our customers.” (Tiffany 2019, para. 3)

Furthermore, Tiffany aims to establish a closed supply chain for receiving its raw gold⁵:

⁵ According to its sustainability report, in 2017, Tiffany “purchased the raw gold used in [its] own manufacturing facilities from U.S. and Canadian sources: 18% [...] of the raw gold came from Utah’s Bingham Canyon Mine, while 75% [...] came from recycled sources in the U.S. [...]. The remaining 7% of raw gold came from a refiner in Canada that sources gold from a mixture of mined and recycled sources.” (Tiffany 2018, 23).

“Tiffany some time ago [...] decided to eliminate the risk in their supply chain of gold by sourcing all of their gold from the Bingham Canyon Mine in the United States. That is the best. You get something at the very large luxury goods producer. But they can make a decision like that because they are not that huge of a consumer of gold so they can get all their gold from one mine. The origin of all their gold in a sense is perfectly known. [...] In an environmental and in a traceability perspective it is a decision the company took.” C4

IIC. Collective and Individual Rule-Setting Influences the Content of the Resulting Sustainability Scheme(s)

In the meta game, one can see that in the case of gold, various collective and individual governance instruments are employed. Both approaches have in common that they deal with the content of rules. By being involved in collective and individual rule-setting approaches in the meta game, companies can considerably impact the resulting content of sustainability schemes, e.g. referring to their scope, ‘quality’, and stringency. This is not surprising because companies that are engaged in the rule-setting process have an inherent interest to shape the rules in a way that matches their governance needs and corporate goals. In the following, I briefly touch upon the effect of collective and individual rule-setting on the resulting sustainability schemes. By doing so, I particularly focus on potential pitfalls of company-driven governance (certifying ‘low hanging fruits’) and advantages (governance specialization).

First, I shed light on the accusation that collective and individual corporate rule-setting could decisively lead to low or minimum quality requirements or, put differently, a ‘race to the bottom’ of governance quality (Fransen 2011; Riisgaard 2011). What I find particularly interesting is that some companies in collective or individual rule-setting approaches could quality-wise foster lower criteria regarding the content of the governance instrument(s). In the

empirical data, I found concerned voices who fear that the influence on the content of sustainability schemes executed by companies could lead to a lower quality when compared to governmental regulations. In other words, some experts fear that companies would only aim for the certification of ‘low hanging fruits’:

“[One] problem is that, from my perspective, the corporate actors that are on board [of governance initiatives], are those that are already doing a good job and they aim for a comparatively low level of the standard’s criteria [...]. So that they can just be certified [without further effort]. But this has no additional value for the firm. And also no positive effect on sustainability or responsible practices, because the company already had responsible practices in place.” C3

And in a similar manner:

“The ‘low hanging fruits’ are reached – those that are already complying with good [sustainability] practices.” C1

According to some interviewees, this is e.g. the case with the RJC. The Responsible Jewellery Council started with mines in Australia and the USA, where social standards are already provided by governmental bodies. According to one interviewee, “[t]his leads to a segmentation of the market. Those actors that already comply with the standard will work according to a higher standard, and those [companies] that cannot comply with the standard, will work according to a lower standard – and will still get rid of their [gold].” (C1).

As companies set the criteria for their collective and/or individual governance approaches themselves, it remains questionable if these approaches provide adequate criteria to cope with sustainability challenges. In the case of individual and firm-specific closed supply chains, one expert argues that these governance approaches do not necessarily use certification or standards as governance instruments, but could de facto be limited to “the principle of fair

trade with a respective narrative” (E5). In other words, jewelry companies with closed supply chains “have the advantage that they are not certified. They do not need to comply with any regulation” (B2). They provided a narrative, “but this is not sustainable at all” (B2).

Second, seen from a different angle, companies can achieve a specialization of governance approaches for their governance needs in the meta game through both collective and individual rule-setting. Fragmentation in the meta game can therefore refer to a specialization of governance instruments (both collective and individual) that address specific governance needs of companies (and third parties). Such specialization of the content of governance can potentially lead to positive outcomes:

“Positive aspects of this variety are of course that different industry branches and issues in different regions of the world are addressed and therefore, a variety of different stakeholders and target groups is addressed, which could not be covered by a single governance setter.” E1

Furthermore, a specialization of governance instruments allows different qualities of sustainability schemes according to different needs of companies. As one approach, existing sustainability schemes introduce distinct levels with varying demands. This approach follows the rationale that governance makers have a heterogenous target audience with regard to existing qualities of practices (Heidingsfelder 2019). In order to cope with this heterogeneity, they provide both baseline standards or principles to lift as many actors as possible to a certain level of ‘good practices’, as well as advanced standards for the sector’s corporate front runners. According to one expert, such distinct levels are preferable because:

“The leaders can use more comprehensive standards and the laggards can start with lower standards. [...] Then you have standards tailored to the capacities of each company. The requirements should not be too high to discourage [the companies] but also not too low to demand too little from them.” E3

Companies and Fragmented Governance in the Basic Game

In the basic game of rule-following, companies can primarily be seen as governance *takers*. In more detail, they need to deal with the fragmented governance landscape in the basic game that was caused by actions in the meta-meta and meta game. Here, they are struggling with finding management answers to cope with governance instruments created in the meta game and to integrate these instruments into their business operations. In more concrete terms, I identified two management challenges where companies struggle with fragmented governance in the basic game: confusion and uncertainty and handling the existing multiplicity of sustainability schemes.

IIIa. Overall Confusion and Lack of Orientation Due to a Fragmented Sustainability Governance Landscape

In the case of the gold sector, companies find themselves in a landscape of fragmented sustainability governance in the basic game, where they, as governance takers, have to deal with the multiplicity of specialized governance instruments. Metaphorically speaking, they need to navigate the sea of fragmented governance when operating their business and aiming to take VCR. Particularly for companies that were not (or only marginally) involved in the meta and meta-meta game, this fragmentation can lead to confusion and uncertainty. Fragmentation in the basic game can complicate decision-making processes as there might be too many options on the table. According to one interviewee:

“I don’t think [the fragmentation is] helping the industry. I mean, the confusion if [the fragmentation] were to persist won't help anyone, because it won't be believable, right? It would be so confusing to the consumer out there, right? Whether that'd be the purchaser or the ultimate user [...] it won't be useful.” S7

And further:

“There are too many standards. Why are there so many? This is very confusing for the consumer! [...] Why can't [we] just simplify it? This [fragmentation of standards] creates more confusion for the consumer than it helps the industry.” B1

Eventually, this overwhelming availability of governance approaches creates additional costs and efforts for involved companies:

“[Fragmentation] requires additional effort and it can be confusing to let's say to the layperson or it can be confusing to those who are just coming into this sector. It can be confusing to miners, it can be confusing to bureaucrats who do not spend very much time on this issue. There is obvious desire to have ironically a less diverse set of initiatives. You know everyone is looking for the silver bullet: 'We want the one standard'.” C4

Furthermore, the findings reveal the burden for multi-commodity companies (both mining and manufacturing ones) in the case of fragmented governance for gold. According to the findings, multi-commodity companies are especially challenged by fragmentation, as they do not only deal with one material like gold, but instead simultaneously deal with multiple materials. First, multi-commodity *mining* companies can face the burden of fragmented sustainability governance. As several extractive resources can jointly occur at a single mining site, many of the (larger) mining companies are not extracting a single commodity like gold, but instead source several commodities (e.g. gold and copper) simultaneously. Given that multiple sustainability schemes exist for gold *and* other jointly occurring minerals and metals, multi-commodity mining companies are particularly affected by a fragmentation of sustainability schemes. Therefore, one could opt for commodity un-specific instead of commodity specific governance approaches. Yet, this would require a shift in the meta game

and awareness for this issue in the meta-meta game. Some developments in this direction can already be witnessed:

“[If] you are an LBMA gold and silver refiner, you only have to have one audit that covers both your gold and silver production. You don’t have to have two audits for that. And we are in the process of launching platinum and palladium, so you will have one audit that would cover four metals! [...] This consolidation and consistency will happen here. [...] We are looking to make sure that LBMA good delivery refiners that produce more than one metal, that they only have one audit for all their metals!” S5

Second, considering the downstream part of the gold supply chain, multi-commodity *manufacturing* companies can face the burden of fragmentation. Analogous to multi-commodity mining companies, manufacturers which use multiple commodities for their products (e.g. cars or smartphones) are considerably affected by governance fragmentation according to the interviewees:

“There are a lot of purchasers, who do not buy only one material, right? Whether you are in the auto sector or the jewelry sector, or the electronic sector [...]. For example, there's one electronic company who stood up in a meeting and said: ‘We buy 41 different mined materials. We are not going to use 41 different standards, folks!’.” S7

Another interviewee supports this thought:

“Take the example of a company that uses different metals and therefore has to have 38 different reporting or due diligence systems to comply with the different standards ... this is inefficient and way too cost-intensive. Therefore, this is one of the arguments for a harmonization or stronger cooperation of standards, for cross-recognition, etc.” B8

Having multiple governance approaches for different commodities is a key challenge for the manufacturing companies, particularly regarding the automotive and electronics industry as lead purchasers of gold and other mined resources:

“The automotive companies are in the spotlight of media and held responsible for more sustainable practices in the production. And from their point of view, they are not pleased with having one standard for each commodity: one for copper, one for gold, one for aluminum. This is an important issue. How to make things easier for the industry players who buy commodities. [...] But the thing is, you are not going to solve that problem by simply having a single standard. That might be true from their point of view.

The reality is that they have to learn that those commodities are *different!*” S6

In addition, the findings stress the issue for companies to choose adequate sustainability schemes. It is the basic game where companies are facing a multiplicity of governance instruments that were created in the meta game. Therefore, choosing the ‘right’ governance instrument for a company can resemble a challenge:

“[The companies] are certainly overstrained with this variety. Because they don’t know which [governance] initiative is the right one for them, or which one is trustworthy and where they should begin. This overstraining is definitely a disadvantage.” E1

Furthermore, one expert describes the process of choosing an adequate governance instrument as follows:

“The decision to take LBMA was not based on what you would refer to sustainability [criteria], but it was a clear requirement from the market. If you want to sell investment gold at a large scale and if you also want to trade gold [...], then you need to be accredited by LBMA. You just need this nowadays. [...] But in the beginning, we said we don’t take [LBMA]. We want the [standard] that our customers prefer – and that was

rather CFSI [Conflict-Free Sourcing Initiative]. So, this was a customer-oriented decision.” B2

Another company representative describes similar experiences with choosing governance instruments in order to satisfy stakeholder expectations, which lead to the incorporation of multiple sustainability schemes at his company:

“[...] LBMA is the oldest, let’s say baseline certification. And then [we have] RJC because we are primarily active in the jewelry sector. This is our main industry. And then for the electronics industry and for the smelters, we [also use CFSI], because it is important for them. So, due to historical reasons and due to our core business, we [use] these three certifications. And we might use additional certifications if needed. For example, one of our subsidiaries [...] uses the Fairtrade [certification], because the customers want it.” B1

IIIb. Handling of Multiple Sustainability Schemes

An additional management challenge entails the handling of multiple sustainability schemes. Here, the findings show that companies as governance takers in the basic game are struggling with multiple audits for different sustainability schemes. Once companies managed to choose their respective governance instrument(s), they need to go through audits in order to receive certification. Yet, audits become a great challenge in light of fragmented sustainability governance. Given the multiplicity of different governance instruments, some companies use more than one standard in order to take VCR and comply with stakeholder expectations. Yet, complying with multiple sustainability schemes represents a great effort for companies. Several interviewed experts describe this phenomenon as ‘audit fatigue’. Audit fatigue can be considered a direct consequence of the multiplicity of governance instruments available in the basic game:

“Audit fatigue! Everyone wants to see a certificate for anything! [...] Everything has a certificate for the sake of having a certificate. And this requires auditing. And auditing costs money and energy, and a lot of time!” B4

For companies that use several different sustainability schemes, the findings suggest that audit fatigue becomes a severe issue. Again, this is particularly the case for multi-commodity companies:

“We are certified by LBMA and by RJC. And the standards have rather similar requirements in some areas and it would be great if we could have one audit that is mutually recognized by both parties. This was recently the case. But it is not possible anymore. [...] This is unfortunate and costs us a lot. It means more audits for us! One reason is that this whole standards and certification business became an actual industry. And therefore, an audit company prefers to conduct two audits instead of one! This leads to a ‘certification business’.” B1

And further:

“[...] you don’t want to have auditors coming at your business week after week...first environmental, then sustainability, then financial, then...you want one audit that will comprise the whole piece that you are trying to address. So the danger is that standards do not react to increasing downstream scrutiny around the sustainability piece.” S5

And in a similar manner:

“Too many audits are a too great effort. Some audits are not one, but three days, e.g. the LBMA audit. And this is an enormous effort: personal, bureaucratic, and financial. ... So you really have to choose wisely whether you implement yet another [sustainability] standard.” B1

Furthermore, I found that some companies, e.g. gold smelters, comply with multiple sustainability schemes and therefore face multiple audits with potential overlaps in content.

One expert from a sustainability scheme critically reflects this:

“We know refiners who are in LBMA, in RJC and in Fairmined. So how can we reduce the schemes for them that they don't feel tired [...] of audits? Okay, today is the audit for LBMA, tomorrow is the audit of RJC and tomorrow is the Fairmined audit. [...] We have tried to sort of collaborate to reduce the burden of audits, because it is also implying time, human capital. We are also spending the human capital of this company.” S3

DISCUSSION

The findings in the gold sector help to develop a more nuanced understanding of the role of companies as potential governance makers and takers at the different stages of the meta-meta, meta, and basic game. Based on the results and conceptual thoughts, I provide a brief discussion of the interplay of companies with different manifestations of sustainability governance fragmentation. In greater detail, I introduce a conceptual framework with three different manifestations of fragmentation at the different stages of the three-tiered governance framework. Furthermore, I elaborate how companies both intensify and are affected by fragmented governance. Naturally, the introduced framework is strongly linked to the empirical findings of this study and does therefore not claim universal applicability.

Based on the empirical findings and conceptual thoughts, I argue that the interplay of governance fragmentation and companies as political actors requires a more nuanced understanding. In order to shed light on the complex interplay of companies with different types of fragmented sustainability governance, I introduce the following conceptual framework

(Figure 3). In the following sub-sections, I explain the components of the framework and highlight three different manifestations of sustainability governance fragmentation.

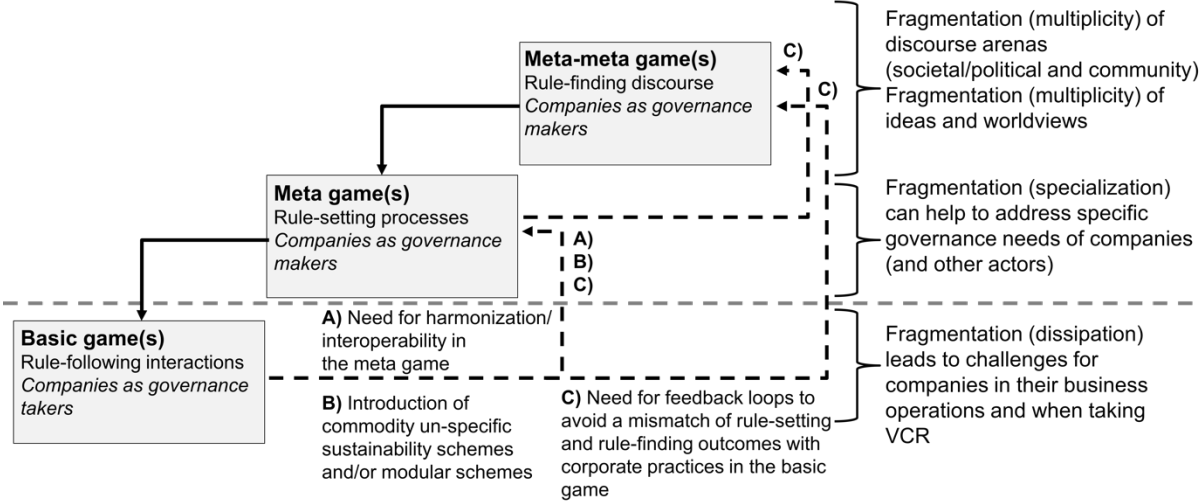


Figure 3: Conceptual Framework of the Interplay of Companies as Governance Makers and Takers and Different Manifestations of Governance Fragmentation, Based on the Findings in the Global Gold Sector and Conceptual Reasoning. Own Depiction Based on Pies et al. (2014, 231, 2010, 274)

Governance Multiplicity and the Role of Companies in the Meta-Meta Game

Companies are rather passively engaged in the wider societal/political discourse as well as actively engaged in the community discourse with their peers as governance makers in the meta-meta game. I found two distinct discourse arenas that are of relevance in the meta-meta game in the case of gold. Against this background, I argue that the fragmentation of sustainability governance in the meta-meta game can be framed as *multiplicity*.

First, fragmentation refers to a multiplicity of discourse arenas. While companies in the gold sector are rather passively engaged in the wider societal/political discourse, they are actively engaged as governance makers in the community discourse. Hence, companies need to cope with the challenge of simultaneously participating in two discourses or arenas with different stakeholders, contextual factors, logics, and values (see Söderbaum 2008; see Roloff 2008; Airike, Rotter, and Mark-Herbert 2016). Therefore, the multiplicity of discourses could be challenging for companies because the discourse arenas potentially have missing

interlinkages, contradictions, and trade-offs. Furthermore, given the different stakeholders in the discourses, companies that aim for encompassing VCR practices might face different expectations (see Jonker and Nijhof 2006) in both arenas: While these companies might experience rejection and prejudgment in the societal/political discourse, they could simultaneously be regarded as front runners or role models in the community discourse. I argue that a key challenge for companies is to find ways to beneficially participate in both discourses with their unique characteristics. Hence, the multiplicity of discourses can resemble a management challenge, as the company needs to find ways to proactively engage in different discourses with varying rules and expectations.

Against this background, I want to emphasize two important aspects for companies as governance makers in the meta-meta game. First, companies need to develop the necessary skills and competences to simultaneously thrive in different discourses. One could argue that they *inter alia* need to develop a sense of “reception competence” which enables the business firm and its managers to “enter into an exchange of ideas with all the actors relevant to the value creation process [...] so that the organization is sensitive to different (and sometimes even incommensurable) views and concerns” (Pies, Beckmann, and Hielscher 2010, 272). On a complementary note, Osagie et al. emphasize the importance of “cognition-oriented competencies” (2016, 249) which allow the firm to anticipate sustainability topics and to understand sustainability interdependencies between the firm and its environment. These competences can help the firm to recognize and incorporate external expectations in the wider societal/political debate in the meta-meta game. Efforts for more transparency and openness in the gold and extractive industries are a first step in this direction. Furthermore, I argue that intermediary and bridging actors (see Abbott 2012; Strambach and Surmeier 2018; Pegram 2015; Berkes 2009) such as industry associations or organizations like ISEAL or the OECD are needed to a) steer, moderate, and facilitate the community discourse, and b) to bridge and

interlink the wider societal/political with the community discourse. In more detail, adequate instruments, platforms, and formats are needed to enable exchange and mutual learning both within the community discourse and beyond.

Second, fragmentation in the meta-meta game and in both discourses can refer to a multiplicity of ideas and worldviews, stemming from the different stakeholders (see Arenas, Lozano, and Albareda 2009; see Yakovleva and Vazquez-Brust 2012; Jonker and Nijhof 2006). For instance, companies with distinct characteristics (e.g. company size, type, value chain position, or geographical anchoring) can contribute diverse perspectives to the overarching rule-finding discourse in the meta-meta game, thus allowing a fruitful debate that incorporates different worldviews and governance needs. Hence, the multiplicity of ideas, actors, and worldviews can be a positive thing, as different voices and concerns of various companies and third parties can be integrated in the rule-finding process. However, the challenging question remains how different stakeholders with varying worldviews can reach a common rule-interest in the meta-meta game. This challenging task is further complicated by the existence of multiple discourse arenas in the case of gold.

Governance Specialization and the Role of Companies in the Meta Game

The insights in the gold sector reveal that companies in the meta game are proactively engaged as governance makers in collective and/or individual rule-setting, which mirrors existing scholarly contributions (Néron and Norman 2008; Rasche 2012; van Oosterhout 2010; Mena and Palazzo 2012; Beckmann, Hielscher, and Pies 2014). By doing so, companies considerably impact the content of the resulting governance instruments like sustainability schemes or firm-specific codes of conduct. With regard to fragmentation, it is the meta game where companies trigger a variety of different governance instruments that hold the potential to address specific governance needs. As a consequence, various different collective and individual governance

approaches with different or overlapping contents are created in the meta game. Although this fragmentation could lead to a diminishing quality of governance approaches (see Fransen 2011; see Riisgaard 2011), it also holds the potential of offering tailor-made governance approaches for unique governance needs of involved companies. Therefore, I argue that fragmentation in the meta game can be framed as *specialization*. Specialization thus refers to tailor-made governance approaches for the respective governance needs of companies and other parties.

As an important note, specialization does not necessarily have to be ‘good’ regarding the outcome for sustainability and the capability to take value chain responsibility. It basically means that specific governance needs are addressed – regardless of the resulting quality, rigor, scope, or stringency of the resulting sustainability scheme(s). Eventually, specialization can potentially lead to an increase of governance approaches (individual & collective) to address specific governance needs of companies.

Against this background, I argue that fragmentation as specialization in the meta game can lead to both positive and negative consequences. Put differently, specialization of governance in the meta game is an ambivalent phenomenon. First, specialization can be positive for companies and their ability to take VCR along the gold value chain. As tailor-made governance approaches address the specific governance needs of companies, companies are enabled to take value chain responsibility according to their existing means and capabilities. From this perspective, specific governance instruments can turn out to be more valuable and effective than ‘one-size-fits-all’ governance solutions that do not differentiate between different company characteristics (e.g. company size, type, and impact on sustainability topics).

Second, however, specialized governance approaches also come with distinct shortcomings. Companies (particularly downstream jewelry companies) increasingly choose company-specific codes of conduct and closed supply chain governance approaches in order to take VCR. However, company-specific codes of conduct and closed supply chains offer one

shortcoming: They considerably increase the overall number of governance approaches. By doing so, companies contribute to a greater number of available governance instruments to take VCR, thus leading to fragmentation. Companies as governance makers in the meta game thus steer the multiplicity of governance approaches. They do so either by creating governance approaches and order mechanisms, or by creating firm-specific codes of conduct and closed supply chains. While this might be beneficial and rational for the individual company, other companies and third parties (e.g. consumers, governments, and civil society) might be overwhelmed by this multiplicity, thus causing challenges in the basic game.

Governance Dissipation and the Role of Companies in the Basic Game

In their role as governance takers in the basic game, companies are confronted with a fragmented sustainability landscape that was created in the meta-meta and meta game. Therefore, I term fragmentation as *dissipation* in the basic game. In the basic game, companies struggle with dissipated governance, as it affects their business operations, thus leading e.g. to difficulties when choosing standards and complying with multiple sustainability schemes. The empirical findings reveal two distinct management challenges when facing a dissipation of sustainability governance in the basic game: confusion and uncertainty as well as handling the existing fragmentation. It is the basic game where companies face the greatest challenges of fragmented sustainability governance. Dissipation is a major hurdle for companies when a) operating their business and b) aiming to take value chain responsibility. Hence, the findings of corporate challenges due to governance dissipation in the basic game are in line with previous studies that emphasize the negative aspects of governance fragmentation (Held and Young 2013; Zelli and Asselt 2013; Karlsson-Vinkhuyzen and McGee 2013; Hospes, van der Valk, and van der Mheen-Sluijer 2012; Bitzer, Francken, and Glasbergen 2008; Smith and Fischlein 2010).

Against this background, companies need to find management solutions to proactively deal with a dissipation of governance in the basic game. Companies can aim to optimize and improve their activities when acting in a landscape of dissipated governance. This can e.g. refer to establishing better processes when choosing sustainability schemes or to internal trainings to cope with requirements of different sustainability schemes.

However, coming back to the three-tiered governance framework, I argue that solutions for challenges of fragmented governance can not only be found in the basic game itself, but require the engagement of companies in the meta and meta-meta game. I therefore make a claim for at least three activities in the meta and meta-meta game that could help to tackle issues of governance dissipation in the basic game.

First, I suggest that companies and other third parties can aim for a harmonization and interoperability regarding the content of sustainability schemes in the meta game (aspect A in Figure 3) (Pekdemir 2018; Mori Junior, Sturman, and Imbrogiano 2017). In this regard, the aspect of interoperability receives growing attention by scholars (Mori Junior, Sturman, and Imbrogiano 2017; Kickler et al. 2018; Mori Junior, Franks, and Ali 2016). Changing the content of sustainability schemes towards a better alignment could help to reduce overlaps and duplications and thus reduce the negative consequences of governance dissipation. Furthermore, approaches of harmonization and interoperability in the meta game could help to decrease the number and complexity of audits, as e.g. parts of one audit can be cross-recognized by another audit. While this does not necessarily mean that the absolute number and diversity of sustainability schemes would decrease, it could streamline the different governance approaches and allow a better alignment and practical handling for corporate practitioners in the basic game. In addition, specialized actors such as the ISEAL alliance could play an important role as meta governance actors to facilitate harmonization and interoperability in the meta game (Turcotte, Reinecke, and Hond 2014; Fransen 2015).

Second, considering multi-commodity companies (both mining and manufacturing ones), the introduction of, or fusion of commodity specific sustainability schemes into, commodity un-specific or modular sustainability schemes in the meta game could resemble one way to decrease corporate challenges of governance dissipation (aspect B) (Kickler and Franken 2017; Manning and Reinecke 2016).

Third, in order to resolve challenges of dissipated governance, adequate feedback mechanisms (aspect C) between all three stages of the three-tiered framework are needed. This is important as those companies that are engaged in the wider societal/political discourse and/or the community discourse in the meta-meta game are not necessarily the same companies that are facing challenges of dissipated governance in the basic game. As an example, powerful downstream companies could dominate the community discourse and the creation of sustainability schemes in the meta game. Whereas upstream companies might struggle with following these rules in the basic game. Put differently, the type of involvement of different companies at different and/or multiple stages of the three-tiered framework can cause questions of matching, representation, legitimacy, and agency: Do the rules created in the meta game match with business operations in the basic game? Are the companies who are engaged as governance makers in the meta and/or meta-meta game the same who struggle with governance dissipation? In order to establish such feedback mechanisms, instruments such as regularly consultations, working fora, mixed boards, and company visits could represent promising approaches. Furthermore, again, intermediaries and moderators are needed to facilitate exchange and cooperation (see Abbott 2012; Strambach and Surmeier 2018; Pegram 2015).

CONCLUDING REMARKS AND FURTHER RESEARCH

Adequate sustainability governance is a key prerequisite to allow companies to take value chain responsibility. However, sustainability governance often comes in a fragmented manner. In light of developments towards transnational sustainability governance and the evident fragmentation of governance, the role of the business firm needs to be rethought. This article addresses the interplay of companies with fragmented sustainability governance when taking value chain responsibility. In more detail, the article addresses the question how companies affect and are affected by different manifestations of fragmented sustainability governance in the empirical case of governance for gold. As a searchlight to guide the analysis, I use the three-tiered ordonomic framework by Pies and colleagues (Pies, Beckmann, and Hielscher 2014, 2010). In order to elaborate the interplay of companies and fragmented sustainability governance, I use the empirical case of fragmented sustainability governance in the gold sector.

As a key contribution, this article provides a more nuanced understanding of a) the role of companies as both affecting and being affected by governance fragmentation and b) different manifestations of fragmentation at the stages of the three-tiered framework. Based on the empirical findings and conceptual thoughts, I shed light on the role of companies as governance makers in the meta-meta game. Here, they are involved in two different discourse arenas (the societal/political and the community discourse) where they can potentially impact the rule-finding process. I argue that fragmentation in the meta-meta game can be framed as *multiplicity* of discourses and worldviews, thus allowing fruitful exchange and mutual learning.

In the meta game, companies are actively engaged as governance makers and determine the content of sustainability schemes. Here, they create collective and individual governance instruments for their particular governance needs. Therefore, I frame fragmentation of governance in the meta game as *specialization*, thus allowing to find multiple, tailor-made governance solutions for specific governance needs.

In the basic game, companies passively act as governance takers. It is the basic game where companies struggle with the fragmentation of sustainability schemes and where they need to find management approaches to cope with downsides of fragmentation. Therefore, I frame fragmentation as *dissipation* in the basic game, thus emphasizing potential downsides for companies when a) operating their business and b) taking value chain responsibility.

By providing a more nuanced assessment of the interplay of companies as both governance takers and makers with different manifestations (multiplicity, specialization, and dissipation) of governance fragmentation, I contribute to the wider scholarly literature on the political role of the firm and sustainability governance. By emphasizing different company roles and manifestations of fragmentation at the stages of rule-finding, rule-setting, and rule-following, I aim to overcome the prevailing negative connotation of governance fragmentation. I argue that fragmentation is per se not ‘good’ or ‘bad’, but ambivalent. Therefore, this article provides some stimulus for further research regarding the interplay of fragmentation and the business firm. First, I encourage scholars to assess the needed competences of companies when taking different roles in varying contexts of governance fragmentation. Regarding the multiplicity of discourses in the meta-meta game, companies as governance makers might need different competences compared to dealing with governance dissipation in the basic game. Second, I suggest to investigate approaches to decrease the downsides of governance dissipation in the basic game. Answers to do so are to be found in the meta and meta-meta game. More research is needed to shed light on the feedback mechanisms between the meta-meta, meta, and basic game in order to solve problems in the basic game.

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APPENDIX

Table 1: List of Interviewed Experts and Their Respective Organizational Affiliation: B (Business Firm), C (Civil Society), E (Education and Research), and S (Sustainability Scheme)

ID	Description
B1	Sustainability manager (refiner/smelter)
B2	Environmental manager (refiner/smelter)
B3	Consultancy representative
B4	Extractive industries/ASM gold consultant
B5	Two company representatives (refiner/smelter)
B6	Company representative and founder (jewelry trading)
B7	Sustainability expert
B8	Consultancy representative and researcher
C1	Expert for sustainability certification and the gold sector
C2	Extractive industries expert
C3	Extractive industries expert
C4	ASM expert
E1	Researcher in the extractive industries and in the gold sector (governmental body)
E2	Researcher in the extractive industries and in the gold sector (governmental body)
E3	Researcher in the extractive industries and in the gold sector (governmental body)
E4	Researcher in the extractive industries and in the gold sector (university)
E5	Researcher in the extractive industries and in the gold sector (consultancy)
E6	Researcher in the extractive industries (governmental body)
E7	Researcher in the extractive industries (university)
S1	Sustainability scheme representative and ASM expert
S2	Sustainability scheme representative
S3	Sustainability scheme representative and ASM expert
S4	Expert (meta governance organization)
S5	Sustainability scheme representative
S6	Sustainability scheme representative
S7	Sustainability scheme representative

10 Paper IV: Hidden Allies for Value Chain Responsibility?

Paper IV: Hidden allies for value chain responsibility? A system theory perspective on aligning sustainable supply chain management and trade compliance (resubmitted to the double-blind, peer reviewed scientific journal IJPDLM)

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Hidden allies for value chain responsibility?

A system theory perspective on aligning sustainable supply chain management and trade compliance

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Abstract

Purpose – The paper investigates how the alignment of two corporate functions, trade compliance (TC) and sustainable supply chain management (SSCM) can help companies to take corporate value chain responsibility (VCR). In particular, the authors investigate how evolutionary system theory can explain the co-evolution of two distinct VCR functions (SSCM and TC) and the potential and challenges for their future alignment.

Design/methodology/approach – The authors introduce evolutionary system theory as a powerful explanatory perspective to the field of VCR, SSCM, and TC. By applying evolutionary system theory to the VCR debate, the authors analyze the potential for aligning both functions. They further analyze the inherent challenges of such an alignment by discussing the concept of organizational path dependencies.

Findings – The paper spells out a research agenda and formulates testable propositions for further investigating the interplay of environment and system as well as the structural options for a functional alignment of SSCM and TC.

Originality/value – The corporate function of TC has been widely overlooked by supply chain and sustainability scholars. This paper adds the function of TC to the wider discussion on SSCM and corporate VCR. Furthermore, the paper develops a research agenda for a pioneer topic and trigger discussion in academia and corporate practice.

Keywords – Sustainable supply chain management, Trade compliance, Value chain responsibility, Evolutionary system theory, Organizational path dependency theory

Paper type – Conceptual paper

1. Introduction

Companies are increasingly held responsible for negative effects along their value chain (Busse, Schleper, et al., 2017, p. 19). In light of ever more complex value networks, corporate decisions within the firm can lead to manifold non-economic consequences outside the firm, both upstream and downstream the value chain (Kovács, 2008; Letizia and Hendrikse, 2016; Schrempf-Stirling and Palazzo, 2016). Diverse stakeholders including NGOs, consumers, investors, and more and more also regulators therefore expect companies to actively address these social and ecological issues (Andersen and Skjoett-Larsen, 2009; Foerstl et al., 2010; Gold et al., 2010; Harms et al., 2013). This paper subsumes this responsibility to address a corporation's sustainability impacts both upstream and downstream the value chain as corporate *value chain responsibility* (VCR).

Within the firm, there are various functions and departments that address VCR. The most prominent approach in this regard is without doubt *sustainable supply chain management* (SSCM). SSCM “aims at integrating environmental and social issues in supply chain management (Bai and Sarkis, 2010; Gold et al., 2010; Seuring and Müller, 2008; Wittstruck and Teuteberg, 2012)” (Harms et al., 2013, p. 207). It has become a dynamic phenomenon in corporate practice and has emerged as a widely established field of management research (Carbone et al., 2012; Gimenez and Sierra, 2013; Harms et al., 2013; Pagell and Shevchenko, 2014; Quarshie et al., 2016; Rajeev et al., 2017; Roy et al., 2018). SSCM, however, is not the only corporate function to address VCR. In fact, this paper sheds light on a second function that many companies engage in, yet that is often overlooked in the debate about VCR: the function of *trade compliance*.

Trade compliance (TC) describes a corporate function in business practice that includes two elements: strategic trade control (import and export control) and supply chain security. As the term denotes, TC is typically driven by an externally enforced compliance logic to e.g. prevent the proliferation of weapons of mass destruction and fight terrorism. While strategic trade control focuses on measures to control and manage import and export streams of the company, e.g. by controlling dual-use items (European Council, 2009)[1], supply chain security implements measures to protect the company's value chain from unauthorized external intrusion (Closs and McGarrell, 2004).

As both SSCM and TC address non-economic dimensions of the buying and selling decisions of a firm, they can both be seen as potential contributions to corporate VCR. Yet, little is known not only about TC in general but more importantly about the relationship between TC and SSCM. Why do many firms have these two separate functions for VCR? How do these functions relate? Is there room for cross-functional integration? And if so, what keeps companies from realizing this potential?

A powerful theoretical perspective to make sense of both the VCR phenomenon as well as of the co-existence of the SSCM and TC function lies in *evolutionary system theory* (Luhmann, 2006; Schneider et al., 2017; Seidl and Becker, 2006; Thompson and Valentinov, 2017). System theory understands the firm as a system that interacts with an external environment. In order to prosper, any system needs to adapt to those environmental requirements that are relevant for its own functioning (Child and Rodrigues, 2011; Lawrence and Lorsch, 1967). To this end, systems develop specific functions and structures to build up the necessary internal complexity that allows dealing with the immense external complexity of its environment (Müller and Powell, 1994; Schneider et al., 2017; Thompson and Valentinov, 2017; Worren, 2016).

Seen from this *system* theory perspective, VCR is thus about the interdependent relationship between a company (as a system) and its external value chain environment. From an inside-out perspective, this relationship includes the sustainability impacts a company causes for its outside (system→environment). From an outside-in perspective (environment→system), it relates to how the environment, in turn, raises sustainability-related constraints and expectations that a company needs to meet in order to sustain important external relationships.

Evolutionary system theory, however, highlights that system-environment interactions are never static but change dynamically (Child and Rodrigues, 2011; Terreberry, 1968). In fact, as the environment changes, systems need to adapt. Yet, as the concept of organizational path dependencies (Sydow et al., 2009; Wagner et al., 2011) highlights, the ability of a system to adapt is always constrained by its previous evolution (Leonard-Barton, 1995; Schreyögg and Kliesch-Eberl, 2007; Sydow et al., 2009; Wagner et al., 2011). A company cannot re-invent itself from scratch but is always influenced by its existing structures and processes.

This paper builds upon and expands these conceptual considerations to address the following research question: *How can evolutionary system theory explain not only the co-evolution of two distinct VCR functions (SSCM and TC) but also the potential and challenges for their future alignment?*

To answer this question, the paper is organized as follows. After this introduction, section 2 introduces the perspective of evolutionary system theory in more detail. Here, a specific focus lies on the importance of functions that allow a system to develop the adequate internal complexity necessary for addressing relevant aspects of its environment's external complexity. Building upon this theory, section 3 then discusses SSCM and TC as two functions that each address VCR, yet emerged separately as they originally responded to different and separated requirements in a firm's external environment. Section 4 then analyzes why there is an increasing potential for aligning the hitherto separate SSCM and TC functions. Here, the key idea is that there are dynamic changes in the external environment that blur the boundaries between SSCM and TC requirements. As external expectations regarding SSCM and TC increasingly overlap, this gradual alignment in the external environment favors adequate forms of internal alignment. Section 5 then uses evolutionary system theory to discuss the inherent challenges of such an alignment. As the concept of organizational path dependencies highlights, companies cannot freely adapt without any constraints but are bound by their previous structures and processes. Section 6 uses the evolutionary system theory lens to engage in a discussion about the parameters that influence the case for and challenges of functional alignment of SSCM and TC. More specifically, the discussion develops three environment-related, three system-related, and three alignment-related propositions that can be useful in guiding future research and spells out a research agenda for further scholarly investigation.

The paper thus makes the following four contributions. First, it introduces evolutionary system theory as a powerful explanatory perspective to the field of VCR, SSCM, and TC. Second, it adds the often overlooked, yet empirically relevant function of TC to the scholarly discussion on SSCM and VCR. Third, it uses evolutionary system theory to analyze the potential and challenges for aligning both functions. Fourth, it spells out a research agenda and formulates testable propositions for further investigating the interplay and potential alignment of SSCM and TC.

2. Theory Perspective: Evolutionary System Theory

System theory is an interdisciplinary field of research that studies the emergence, development and interrelations of systems and sub-systems with their environments. While there are many strands of system theory, this paper employs a pragmatic understanding of key features of the Luhmannian perspective (Luhmann, 1995a) that is currently receiving again increasing attention in the scholarly discourse (Cooren and Seidl, 2019; Luhmann, 2018). As a key asset, Luhmann's comprehensive work offers "insights on what happens within organizations, but also on the interconnection between organization and environment" (Baralou et al., 2012, p. 296). Following this line of thought, the subsequent sub-sections introduce selected concepts of system theory that are useful for analyzing SSCM and TC: distinction, systems, environments, openness and closeness, complexity and, importantly, the idea of functions (Schneider et al., 2017).

According to Luhmann, the aspect of difference or distinction is crucial for any systems theory (Luhmann, 2006; Seidl and Becker, 2006). In more detail, “systems theory always begins with an assumption of difference” (Müller and Powell, 1994, p. 44). This difference refers to the “difference between system and environment” (Luhmann, 2006, p. 38). Through such distinctions between the system and its environment, a system can emerge and prevail within its system boundaries (Hernes and Bakken, 2003, p. 1515). Hence, the system is “the creation of form within the medium of environment” and will “always maintain the distinction between system and environment” (Brandhoff, 2009, p. 312). In more concrete terms, companies as organizations can be regarded as systems with distinct differences that distinguish them from their environment. Following previous scholarly work, this paper treats systems and organizations as interchangeable terms for the sake of simplicity (Schneider et al., 2017). Furthermore, the idea of differentiation allows systems to develop internal sub-systems, “for which the rest of the system then in turn becomes an internal environment” (Müller and Powell, 1994, p. 45). In the case of the business firm as an organization (system), this line of thought suggests that companies can in turn develop internal sub-systems (e.g. structural units/functions) that are different from their respective internal environment (e.g. other structural units/functions).

A second important feature of Luhmann’s work on systems theory refers to the conceptual debate in system theory on closed and open systems (von Bertalanffy, 1968; Thompson and Valentinov, 2017). On the one hand, Luhmann refers to systems as being operationally closed because “they regulate internal and external complexity [...] through selectivity or reduction” (Baralou et al., 2012, p. 294) within the closed and sharp boundaries of the system. Put differently, this operative closure describes a “closure on the level of [the system’s] operations in the sense that no operations can enter or leave the system” (Seidl and Becker, 2006, p. 15). On the other hand, systems are open and interact with their environment (in turn consisting of other systems), e.g. to exchange energy and matter (Baralou et al., 2012; Hernes and Bakken, 2003; Seidl and Becker, 2006). Bringing in a first element of evolutionary theory, systems eventually need to interact with and “adapt to their environments in order to survive (e.g. Lawrence and Lorsch, 1967)” (Child and Rodrigues, 2011, p. 804). Somewhat counterintuitively, there is “no contradiction between the openness and closure of boundaries” of systems (Hernes and Bakken, 2003, p. 1520). Instead, Luhmann argues that “a system must be closed in order to be open” (Hernes and Bakken, 2003, p. 1520).

Coming back to the differentiation between system and environment, the notion of environmental complexity deserves particular attention. As previously mentioned, systems (e.g. business firms) exist through the distinction between ‘what is them’ and everything ‘out there’ that matters for their existence. As ‘out there’ comprises not only the structures of the natural, economic, legal, and political environment but also psychic systems (i.e. people including customers, neighbors, citizens, etc.) and organizational systems (such as companies, governments, NGOs etc.) that each spell out expectations regarding the firm, companies always face an environment characterized by substantial external complexity (Siggelkow and Rivkin, 2005). In this context, the degree of complexity can inter alia be framed as the degree of interdependencies between the system and its environment. Following the idea of environmental complexity, system theory can then be applied to study how systems respond to issues of complexity in their environment (Schneider et al., 2017). System theory then points out what can be framed as a “complexity differential” (Schneider et al., 2017, p. 183). This means that “a system (such as a business firm) is necessarily less complex than its environment (Luhmann, 1995a) because, to operate efficiently, a system selects only a limited amount of all the information that is available outside its boundaries” (Schneider et al., 2017, p. 183). As a consequence, one can argue that a key function of a business firm, as a system embedded in its environment (Pache and Santos, 2010), is to handle its external complexity (Valentinov and Thompson, 2019, p. 570).

To illustrate this abstract thought, take the concrete example of an animal (as a biological system) such as a moth (Roeder, 1965). The external environment of this system is incredibly complex. Yet, not all aspects of it are equally relevant for the moth's survival. The moonlight might be very relevant to help the moth navigate. To process this aspect of external complexity, the moth possesses elaborate structures (eyes) that endow it with the function of sight. This increase in its internal complexity allows the moth to handle more external complexity. Note, however, there are many more things happening 'out there' that the moth does not capture such as UV light, magnetism, radiation, and many other aspects. As there is always more going on in the external environment, there is always a necessary "complexity differential". As a result, a system's internal complexity is always selective. It cannot process the environment 'as it is' but constructs an internal, selective representation of it.

Similarly, companies need to navigate their environment in a way that addresses the relevant aspects of external complexity. To this end, organizational entities can deploy distinct strategies to deal with varying degrees of external complexity in their systems' environments. Following a Luhmannian systems perspective, systems need to internalize external (environmental) complexity with internal complexity, thus requiring a "modification of their structures and processes" (Schneider et al., 2017, p. 203). Put differently, companies as organizations need to mirror external complexity with an adequate form or representation of internal complexity, e.g. by building new or changing existing functions and structures in order to survive as an organization (Schneider et al., 2017). The underlying idea is that systems with their given functions and structures can only deal with external complexity until a certain threshold. If this threshold of complexity is exceeded, the system has to respond with an internal increase in complexity (e.g. resulting in additional functions and structures) (Thompson and Valentinov, 2017).

To illustrate, let us return to the moth example (Roeder, 1965). If bats enter the environment that use ultrasonic echolocation, external complexity increases. In fact, hearing what goes on 'out there' may become a matter of life and death for the moth. In this situation, many moth species responded to this increase in external complexity by developing additional internal complexity: These species have developed the sense of hearing (ultrasonic sound) and then let themselves drop to the floor once they hear the approaching bats. Note how changes in the external environment favor changes in the internal response of a system and actually lead to new structures (ears) and a new function (sense of ultrasonic hearing).

As the preceding passages already alluded, a key system theory concept lies in the notion of *functions*. From a system theory perspective, the primary purpose or goal of system functions is to handle the external complexity of the system's environment (Müller and Powell, 1994; Worren, 2016). In an organizational context, this can be achieved by developing respective structures or corporate departments/units (sub-systems of the business firm) to help fulfill the function (Thompson and Valentinov, 2017). In the words of Worren (2016, p. 776), a "function is fulfilled by a structure, yet function and structure are separate from each other conceptually". As this distinction is of central importance for this article, it is important to elaborate it in the following.

For the remainder of this study, *function* refers to a specific purpose (e.g. addressing complexity, fulfilling distinct stakeholder expectations) that is relevant for a system to survive or prosper. Note that with regard to the environment, specific functions then address specific parts of external complexity. The moth's sense of sight, for example, handles visual information, yet is blind to sound or temperature. Function then relates, more abstractly, to *what* needs to be achieved for a system. *Structure*, in contrast, refers to concrete forms of *how* something is achieved. For the moth, the way the eyes are formed, their visual receptors, and nervous pathways describe the structure that allows fulfilling the function of seeing. Several aspects are worth pointing out here. First, the distinction between structure and function highlights that systems can have very different structures, yet the same or very similar functions.

Coming back to the moth example, the function of sight can be performed through very different eye-structures (insects, vertebrae, and octopus can all see but have completely different eye structures). Second, as structures are embedded in how the system operates, they have a stable ‘structural’ aspect. Third, when structures emerge or change, they do not evolve out of nowhere but are embedded in a structural context that influences their further development.

Applying this distinction to the firm, functions allow companies to handle specific sub-tasks that are needed to navigate and prosper in a complex environment, whereas structure refers to the corresponding format or departmental unit to allow the function to be fulfilled. Given distinct functions, it is not surprising that oftentimes the respective structures are clearly detached from one another, which can be framed as “structural separation” (Worren, 2016, p. 779). According to Schneider et al. (2017, p. 183), “internal complexity may be accomplished by means of functional speciali[z]ation, structural differentiation, or by enhancing organizational processes”.

To summarize the theory review so far, system theory argues that in order to proactively and successfully cope with (rising) external complexity, companies have to adapt their internal complexity. Specific functions then allow handling relevant aspects of the external environment to ensure the system’s survival. These functions build upon concrete structures within the firm such as dedicated positions, the establishment of distinct organizational units or departments. Based on this review, the next section discusses not only how the debate about VCR can be understood as reflecting an increase in companies’ external complexity. More specifically, it also analyzes the two separate functions of SSCM and TC as corporate responses that historically emerged separately because they originally addressed separate requirements in the external environment.

3. Understanding SSCM and TC as Two Independent System Functions

Organization theory scholars highlight the general importance of assessing the “relationship between firms and the environment” (Chandler, 2014, p. 1722). Elaborating this perspective, system theory then invites analyzing how specific functions address selected aspects of the system-environment nexus and how changes in environmental complexity correspond with changes in a system’s internal complexity, which may include leading to internal functional differentiation.

Applying this perspective to the analysis of VCR first shifts the focus towards understanding how modern value chains have changed external complexity, system-environment relationships, and internal functional differentiation. In this regard, companies have developed ever more complex multi-tier value networks in light of off-shoring, outsourcing, and an increasingly globalized economy (Gereffi et al., 2005; Kano, 2018). The emergence of conventional supply chain management (SCM) as a standard corporate function illustrates how firms have established additional internal complexity to handle the additional external complexity. SCM manages both the inside-out effects of the firm on its suppliers (e.g. supplier development) and the outside-in effects of, for example, changes in price, quality, and risk that suppliers create for the firm (Jahns et al., 2006). As system functions necessarily process environmental complexity in a selective way, so does conventional SCM. Focusing on what is most relevant for the immediate prospering of the firm, it manages the economic dimension of the firm’s relationship with its value chain environment.

Economic value creation, however, is not the only effect that occurs alongside a value chain. In fact, individual corporate decision making within one firm in the value chain can translate into various (negative) effects for diverse stakeholders both upstream and downstream the value chain (Svensson et al., 2018). From a sustainability perspective, these value chain effects can materialize in different dimensions. In a well-known, more narrow perspective, sustainability is seen as combining the three dimensions of ecological, social, and economic issues as

popularized in the Triple Bottom Line (TBL) (Elkington, 1998). With the 2015 declaration of the UN Sustainable Development Goals (SDGs), however, the recent sustainability discourse embraces a more encompassing perspective of sustainable development that distinguishes five dimensions, known as the 5 P's: planet (ecological dimension), people (social dimension), prosperity (economic dimension), peace (security dimension), and partnership (collaboration dimension) (United Nations General Assembly, 2015, p. 2). In light of crises such as the Syrian civil war or international terrorism, the peace dimension acknowledges the importance of providing security as a prerequisite for any society to flourish and take care of people and nature. The partnership dimension highlights that none of the SDGs – be it ending poverty or protecting the climate – can be achieved by one single actor (Schaltegger et al., 2018).

Against this background, the 5 P's provide a useful lens to frame the debate about VCR. The SDGs indicate that there are diverse societal expectations regarding sustainable development that companies encounter in their value chain environment. Put in the language of system theory, as Schneider et al. (2017, pp. 194-195) maintain, aspects of corporate social responsibility thus “increase the complexity of a firm's environment”. If companies want to successfully manage this manifestation of external complexity, they need, from a system theory perspective, to internalize this external complexity with adequate functions and corresponding structures. While there are various corporate functions that can contribute to taking VCR such as communications, R&D, production and marketing (see Schaltegger et al., 2014), the following sections conceptualize how SSCM and TC have historically evolved as novel forms of functional differentiation that each address specific aspects of external complexity by each adding specific elements of internal complexity to the firm.

3.1. Sustainable supply chain management

If a system wants to manage its system-environment interactions, it needs to bring together the inside-out and outside-in effects of this relationship. With regard to sustainability and value chain interactions, the inside-out (system→environment) effects relate to how corporate decision-making within the firm impacts nature or stakeholders such as workers in the supply chain. The decision to source shoes of a specific color, for example, can be linked to the usage of chemicals in the dyeing process at a supplier that results in toxic waste water and health hazards for local employees. Over the past decades, such potentially harmful effects have become more relevant for two related changes in the system-environment interaction. First, due to out-sourcing, companies engage in more complex and deeper value chains (Harland et al., 2003). Second, due to off-shoring, many Western companies source from suppliers that operate in countries where environmental and social regulation is weaker than, say, the US or the EU (Maruchek et al., 2011, p. 717). As a consequence of these changes in system-environment relations, inside-out effects create additional sustainability challenges.

Note, however, that the mere existence of sustainability-related inside-out value chain effects is not automatically sufficient for firms to take responsibility for them. In fact, numerous companies do little about their sustainability effects in the value chain, be it companies in less developed economies (Kuo et al., 2017) or some Western companies that ‘fly under the radar-screen’. In this situation, system theory highlights that given the “complexity differential” discussed above, companies will always be selective in how they process their environment. More specifically, they will focus on those aspects of external complexity that are relevant for how the firm can operate and prosper. In other words, the motivation of companies to manage their inside-out effects will be influenced by the outside-in effects of how sustainability issues in the environment are or are made relevant for the firm.

Against this background, the evolution of SSCM responds to significant changes in the external environment of value chains. In fact, the emergence of SSCM was, among other things, triggered by various sustainability scandals in multiple industries, e.g. including scandals in the

textile and apparel sector (Khurana and Ricchetti, 2016). Consequently, phenomena like consumer boycotts such as in the case of the anti-sweatshop movement created strong outside-in effects that made the related sustainability issues economically relevant for the prospering of the boycotted firms. System theory highlights that critically important elements of a company's environment are other systems such as organizations (e.g. NGOs, media) or psychological systems (e.g. critical consumers or citizens). By this logic, it is worth pointing out that it was not the sustainability issues themselves that made companies respond to them but changes in external expectations voiced by other actors. By now, various stakeholders such as consumers, NGOs, governments and shareholders are increasingly expecting the business firm to actively resolve sustainability issues along global value chains (Andersen and Skjoett-Larsen, 2009; Foerstl et al., 2010; Gold et al., 2010; Harms et al., 2013). Inversely, the non-fulfillment of these expectations can result in relevant outside-in effects such as "adverse publicity, reputational damage, and costly legal obligations (Carter and Jennings, 2004)" (Foerstl et al., 2010, p. 118).

From a system theory point of view, SSCM thus serves as an organizational response that increases a firm's internal complexity in a way that allows handling relevant external complexity as a result of environmental change. The function of SSCM emerged in order to address "pressures and requirements of different internal and external stakeholders to improve the sustainability of products [and value chains]" (Harms et al., 2013, p. 207). Furthermore, the function of SSCM is motivated by the "recognition of the strategic importance of purchasing and supply activities both in achieving the firm's long-term performance, and in addressing sustainability issues within business capabilities (Burgess et al., 2006; Hall and Matos, 2010)" (Touboullic and Walker, 2015, p. 16).

Apart from some exceptions, the debate on SSCM eventually gained momentum in the 1990s and 2000s, particularly starting with a strong focus on environmental aspects of sustainability in the beginning (Gimenez and Sierra, 2013; Rajeev et al., 2017). Over time, companies understood the broader relevance and urgency of SSCM as a function to respond to increasing external expectations, which eventually lead to a mainstreaming of the SSCM function in business practice (Corbett and Klassen, 2006; Corbett and Kleindorfer, 2003; Pagell and Wu, 2009). In corporate practice, SSCM therefore became a common-place extension (or, put in system theory language, further functional differentiation) of conventional supply chain management (Svensson, 2007). As institutional theory points out, this isomorphic behavior (DiMaggio and Powell, 1983) in turn strengthens expectation structures of what firms need to do in order to be perceived as legitimate.

Due to its popularity and dissemination in various industries and countries, a plethora of definitions emerged to describe the function of SSCM (Touboullic and Walker, 2015). For the sake of this study, SSCM can be understood as "the management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account, which are derived from customer and stakeholder requirements" (Seuring and Müller, 2008, p. 1700). This definition can be nicely related to the system theory employed here. First, taking all three dimensions of sustainability into account describes the specific function that SSCM contributes to managing the firm-environment relationship in the value chain. Second, the customer and stakeholder requirements describe the relevant aspects of the environment that define the outside-in effects for the firm. Note that without these environmental drivers, SSCM would lose its direction and internal business relevance. Third, the management of flows and cooperation along the value chain relates to the inside-out effect that the company creates for the environment.

To fulfill its purpose, SSCM needs to scan what is going on in its value chain environments, monitor the firm's inside-out effects, and manage this interplay. To this end, SSCM entails diverse management approaches, starting from purchasing decisions over supply and sourcing

to procurement policies, labor practices, codes of conduct and other managerial tools (Vurro, Russo, and Perrini, 2009). Furthermore, standards and norms resemble an important field of management practices within SSCM to fulfill the function's tasks, e.g. including social conventions and eco-management schemes (Harms et al., 2013) as well as company specific codes of conduct (Andersen and Skjoett-Larsen, 2009).

The function of SSCM thus serves *inter alia* to reduce sustainability risks along the value chain, assure legitimacy of the company when operating its value creation activities and uphold corporate reputation (Harms et al., 2013). Coming back to the important distinction between function and structure, the function of SSCM can manifest in corporate practice in different forms. Companies can establish particular organizational structures to 'host' the function of SSCM (Baumann-Pauly et al., 2013; Schneider et al., 2017) such as separate departments or organize the function within related units such as a CSR team (see Harms et al., 2013).

In a nutshell, SSCM can be regarded as a phenomenon of functional differentiation, which adds internal complexity to the firm that allows responding to specific external expectations that arose in firms' environments. The following section discusses that the function of trade compliance shows important parallels, yet historically emerged as a response to a different subset of environmental requirements.

3.2. *Trade compliance*

While SSCM is, indeed, critically important for managing a firm's VCR, this paper argues that there is a second corporate function that scholars interested in VCR have so far largely overlooked: the function of *trade compliance* (TC) (Treier, 2015).

Although the term TC is not widely used in the literature, it describes a relevant corporate function in business practice that includes two elements: strategic trade control (import and export control) and supply chain security. Both elements are of particular relevance for VCR. Taking the lens of the 5 P's, the corporate function of TC can fulfill above all specific stakeholder expectations in the dimension of peace.

The first element, strategic trade control, includes import as well as export control activities by the firm. Strategic trade control historically developed to prevent the proliferation of weapons of mass destruction (WMD) (Bauer, 2015, p. 73). While the inside-out effects of such corporate behavior could create security issues in the external environment, firms take care of them because they would otherwise experience substantial outside-in consequences because of regulatory sanctions. In fact, most countries established legal requirements to establish controls on sensitive exports due to their obligations under international treaties and agreements (e.g. Nuclear Suppliers Group, Wassenaar Arrangement, UN Security Council Resolution 1540). While governments regard export controls as an important instrument for promoting peace and security, private business interests have often viewed them as hindrance to trade and an example of government overregulation (Thorne, 2008).

Here, companies seek to make sure that their trade flows are in accordance with foreign trade and customs law and do not violate legal provisions, e.g. by selling goods without an export license (Ewing and Kramer, 2017) or by importing goods that could finance terrorism (Alderman, 2018).

Note the specific source of these outside-in pressures. Export and import restrictions or license requirements derive from domestic and foreign trade and customs law, as well as international agreements and sanctions. As a result, they reflect the external requirements in the legal and political environment, formulated by public actors and regulatory bodies.

Within the firm, strategic trade control adds internal complexity by being responsible for a chain of activities, which includes import, transit, transshipment, brokering, and financial transactions (Bauer, 2015). It does not only refer to tangible goods, but also to services and the transfer of intangible technologies. In order to manage their inside-out effects, companies have

to check the origin, recipient of a good, its final destination and end use (Bauer, 2015). They have to be careful that unauthorized actors do not get access to dangerous products (i.e. dual-use goods, hazardous chemicals, or weapons), which requires for example the screening of business partners against international sanctioned party lists. In addition, companies have to make sure that they do not finance criminal activities by purchasing goods of unauthorized actors (i.e. terrorists or oppressive regimes).

In academic research, strategic trade control has received little attention so far. At first sight, one explanation for this blind spot might be that only few companies are obliged to implement strategic trade control. Yet, in 2015, an attempt by the European Commission to quantify the size and scope of the EU's dual-use industry showed that dual-use exports account for 3.9% of total EU exports with a value close to €180 billion (SIPRI & Ecorys, 2015, p. 13). This is more than twice as much than the €80 billion (Eurostat, 2019), which the EU imported that same year in terms of textiles; an SSCM topic, which has received wide scholarly attention (Köksal et al., 2017; Oelze, 2017). Among the ten sectors that record the highest value in dual-use exports (2014) are machinery and mechanical appliances (32%), electrical machinery and equipment (18%), and aircraft and spacecraft (12%) (SIPRI & Ecorys, 2015, p. 14).

The second element of TC is supply chain security. It describes corporate efforts to ensure supply chain resilience by protecting “supply chain assets (product, facilities, equipment, information, and personnel) from theft, damage, or terrorism, and to prevent the introduction of unauthorized contraband, people, or weapons of mass destruction” (Closs and Mcgarrell, 2004, p. 8). Supply chain security thus combines both an internal and external perspective by preventing “intentional, unauthorized act(s) designed to cause harm or damage to, or by, the supply chain” (ISO, 2007, p. 2).

Historically, customs departments focused primarily on issues like tariffs between different customs territories, and the prevention of smuggling and theft. With the emergence of international terrorism, security played a bigger role on the political and economic agenda. Since the terrorist attack on the World Trade Center in September 2001, there is a stronger focus on vulnerabilities at different locations of the supply chain (Hintsä, 2010; Williams, Lueg, et al., 2009). Several initiatives under the WCO SAFE Framework of Standards to Secure and Facilitate Global Trade (SAFE Framework) (WCO, 2018) were launched to efficiently maintain supply chain security (Chang and Wu, 2015). The idea behind this voluntary customs-to-business partnership program is that each company secures its part of the supply chain. If each individual link is secured, end-to-end security of supply chains from the manufacturer to the final importer can be reached.

Supply chain security focuses on measures a company can take to protect its value chain from external intrusion, whereas strategic trade control concentrates on measures to control and manage import and export streams of the company. As there are strong operational overlaps, especially in the area of nonproliferation and the fight of terrorism, TC combines both aspects. Trade violations and supply chain security breaches can be regarded as a form of supply chain risk. Thereby they have the potential to not only damage the company itself but affect society at large (Lu et al., 2017). As managing these security issues thus contributes to peace, one dimension of sustainable development, it is somewhat surprising that, so far, neither corporate practice nor academic scholarship have framed TC explicitly as a sustainability contribution. Yet, as fulfilling existing legal requirements is crucial for managing responsible system-environment relations, TC can be interpreted as an important element of fulfilling the broader function of VCR.

Although TC issues are definitely not new for business, strategic trade control predominantly appears in the context of nonproliferation (Hobbs and Young, 2015; Kurzrok and Hund, 2013; Weise and Hund, 2016) and has not received much attention by supply chain scholars (Salisbury, 2013). In recent years, however, there has been an increasing focus on

supply chain security (Autry and Michelle Bobbitt, 2008; Blackhurst et al., 2015; Closs and McGarrell, 2004; Williams, Lueg, et al., 2009; Williams, Ponder, et al., 2009).

3.3. *Different internal responses to external complexity*

Evolutionary system theory now allows conceptualizing and comparing SSCM and TC. Just as SSCM, the emergence of TC can be seen as the functional differentiation of previous organizational functions in the light of increasing external complexity. Originally, companies that imported and exported goods across borders and customs areas needed to comply above all with customs regulation. To manage this relevant aspect of a firm's legal environment, companies already had corresponding internal organizational structures such as customs departments. In light of trade liberalization, however, customs regulations have become less relevant while the past decades have added new legal and security-related requirements and thus additional complexity to the external environment for trade (Williams et al., 2008, p. 255).

Table 1. Differences of sustainable supply chain management and trade compliance

Category	SSCM	TC
Evolutionary origin	Response to consumer-relevant scandals	Customs regulation and security related to political agenda
Example of critical incidents in the external environment	Sustainability scandals in multiple industries, e.g. Nike sweatshop scandal and resulting social standards	Threat from international terrorism, e.g. 09/11 terrorist attack on the World Trade Center and resulting legislation
Specific function and VCR contribution	To take into account social and ecological issues	To take into account economic (customs) and security (peace) issues
Key stakeholders that create outside-in pressures	Consumers, NGOs, media, civil society	Government, public authorities
Primary subset of environmental requirements	Soft law (voluntary standards and industry initiatives)	Hard law (binding customs and trade regulation)
Exemplary system structures involved in fulfilling the function	Procurement, marketing, product development, CSR-team, quality management	Customs, export control, legal, compliance, logistics

From a system theory perspective, TC thus shows many similarities to but also differences from SSCM (see Table 1). Just as SSCM, TC serves to manage a specific subset of system-environment relations. Yet, while SSCM focused originally on social and environmental issues, TC emerged with a focus on security-related issues. Both functions thus respond to changes in their external environment and to novel external expectations, yet focus on different subsets of the external environment. This is reflected by an original importance of the legal environment for TC whereas SSCM was driven by voluntary action and non-legal, soft law, standards. Closely connected, different stakeholders were originally responsible for creating outside-in pressures, with governments and regulatory bodies driving TC and NGOs, consumers, and investors calling for SSCM. Mirroring these different subsets of external complexity, the SSCM and TC function have established different practices within the firm to increase internal complexity. In doing so, both functions differentiated as refinements of existing functions, yet typically building upon different structures, with TC being more likely to be linked to the customs or legal department and SSCM often connected to SCM, CSR-teams, or similar units.

4. The Case for Internal Alignment

The previous section has argued that SSCM and TC emerged as separate functions within the firm because each originally addressed different subsets of external requirements of a firm's environment. SSCM and TC can thus be seen as 'hidden allies for value chain responsibility' in the sense that both functions focus on *separate* aspects of VCR, with SSCM focusing on social and environmental issues and TC addressing security considerations.

This section goes one step further and argues that SSCM and TC can increasingly be allies for VCR by taking joint responsibility for *overlapping* sustainability issues. Highlighting the dynamic element of evolutionary system theory, the key argument is that there are changes in the external environment that result in various trends that increasingly connect the external requirements previously addressed separately by SSCM and TC. These areas of overlap or alignment in the company's external environment create the potential for cross-functional internal alignment within the company.

4.1. External overlap and interdependencies of sustainability dimensions

As illustrated by the 5 P's, sustainability (and therefore VCR) entails a great variety of different topics. In this regard, some of these VCR issues can clearly be assigned to one of the two specific functions SSCM and TC. While for example issues of emissions or non-discrimination in a value chain context can be assigned to the function of SSCM, the screening of supply chain actors against international terrorist lists is assigned to TC. However, other issues are not easily assignable, because sustainability conversations are increasingly complex. To the extent that sustainability issues are increasingly connected in the external environment, it becomes difficult to pin them down to a singular function within the firm. More precisely, the exclusive allocation of a sustainability issue or topic to a single corporate function (SSCM or TC) and its respective organizational structure thus becomes increasingly challenging. This leads to blurry boundaries of allocating corporate functions to VCR issues. In fact, in both functions of SSCM and TC, a widening to new areas of the 5 P's can be observed. In particular, a convergence trend with regard to social and security aspects can be identified. Here, SSCM increasingly adopts peace and security issues whereas TC adopts more and more social issues. Or put inversely: Sustainability topics do not differentiate between the two functions, but increasingly affect both functions. This can be framed as a challenge for functional assignment.

This complexity of sustainability topics gets most comprehensible at the content level. One particular difficulty of functional assignment occurs with regard to the protection of human rights. As a consequence of the sustainability scandals in the textile industry, the topic was historically integrated as a matter of *social* sustainability in SSCM. By this logic, human rights issues are traditionally incorporated in management systems, sustainability standards, certifications, codes of conduct and alike. Recently, however, human rights issues enter the company through new channels. Especially the TC domain of export controls now increasingly extends to the protection of human rights as well. As a consequence, human rights issues are integrated in *security* measures like embargos, sanctioned party lists or dual-use controls. In the case of sanctions against Syria or Venezuela, the reason for unilateral trade measures are violations against democratic and human rights. Another area of trade restrictions are prohibitions of items that could cause human rights violations (e.g. torture and execution) (European Parliamentary Research Service, 2018). Additionally, there is a growing relevance of dual-use items for human rights at a European level (Bromley, 2017; Kanetake, 2019). Originally, the control of dual-use items, weapons and ammunition was a clear measure to foster primarily peace. Yet, the EU Commission recently proposed to recast the existing dual-use regulation No 428/2009 to add a new category of dual-use items in the area of cyber-surveillance technologies that focuses on human rights. The proposal argues that "certain cyber-surveillance technologies [...] have been misused by persons [...] committing serious violations

of human rights or international humanitarian law in situations of armed conflict or internal repression” (European Commission, 2016, p. 12). All presented examples support the argument that due to changes in the external environment and overlapping external expectations, a distinct assignment of a sustainability topic like human rights to a single corporate function becomes increasingly difficult.

In a similar manner, the assignment of the topic area of hazardous substances and chemicals to a distinct corporate function can resemble a difficult endeavor. The TC function is in charge of preventing terrorist intrusion and other harmful events. However, the case of dangerous substances shows that there are also overlaps of SSCM and TC in this area. Examples are the Restriction of Hazardous Substances (RoHS), or the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). From a security perspective, the company has to prevent the misuse of substances for terroristic and criminal purposes. Yet, dangerous substances also have an ecological impact on the planet in form of emissions, effluents and waste, and therefore target the SSCM function that is responsible for environmental issues. The third area affected is the social component of SSCM: Dangerous substances concern occupational and customer health and safety.

Another example for a VCR issue where increasingly overlapping external requirements render the internal functional assignment ever more challenging, are conflict minerals (Hofmann et al., 2018; Timmer and Kaufmann, 2017). Their “systemic exploitation and trade contribute to human right violations in the country of extraction and surrounding areas” (Hofmann et al., 2018, p. 115). It is difficult to exclusively and clearly assign the issue of conflict minerals to the function of SSCM or TC. Due to their human rights aspect of forced and child labor, one could locate conflict minerals to the function of SSCM. As the due diligence of conflict minerals requires the control of trade flows, however, one could also argue that the issue is more suitable for TC, as the function holds expertise in this area.

To sum up, in the external environment, topical convergence regarding sustainability challenges occurs in the dimensions of people (human rights, health and safety) and peace (dangerous substances, dual-use goods, conflict minerals) thus challenging a supposedly clear-cut functional differentiation between TC and SSCM within the firm.

4.2. Increasing overlap of relevant stakeholders and regulatory modes

As argued above, SSCM and TC were originally characterized by different stakeholder groups that primarily drove each function’s development. However, this paper suggests that this clear-cut distinction of two separate subsets of a company’s stakeholder environment increasingly becomes blurry. In the case of SSCM, initially voluntary approaches were primarily driven by private stakeholders, consumers, and NGOs. This can be framed with the notion of private governance (Merk, 2007; Scherer et al., 2016). In recent years, however, it can be witnessed that governmental actors increasingly push for hard law regulation. In fact, there is a certain trend towards formalizing formerly voluntary sustainability standards and approaches. Examples for the ‘hardening of sustainability soft law’ (Nolan, 2018) are the EU sustainability directive 2014/95/EU that lays down the rules on corporate disclosure of non-financial information and the RoHS directive 2011/65/EU, which restricts the use of hazardous substances in electrical and electronic equipment (EEE). As an additional example, the forthcoming EU Conflict Minerals Regulation will provide hard law regulation for a sector that is so far characterized by multiple private governance standards. Inversely, private self-regulation plays an increasingly important role for TC. Following the set of mandatory regulations, voluntary business alliances (e.g. Transported Asset Protection Association), programs, and standards (e.g. Facility Security Requirements, Trucking Security Requirements) evolved in the aftermath of 2001 (Hintsa, 2010). Customers more and more create coercive pressure and compliance expectations beyond governmental requirements (e.g. 24 hours

accessibility to tracking information) (Williams et al., 2009) and trigger private governance in the field of TC.

For SSCM and TC, these changes in the regulatory environment lead to an increasing overlap in terms of the relevant governance environments for SSCM and TC. As a result, the function of SSCM needs the competences to increasingly manage compliance with governmental requirements as well as to deal with or even proactively shape the formalization of previously private governance to tackle value chain relevant sustainability challenges and complexity. On the other hand, the function of TC, in turn, needs to include aspects of voluntary standards and private self-regulation into its functional logic that is originally rather characterized by a compliance logic to meet governmental requirements.

In sum, there is increasing overlap between external stakeholders and governance modes (soft and hard law) that are relevant for SSCM and TC, thus creating a potential for rethinking a strict internal separation between these two functions.

4.3. Interconnected supply chain risks, due diligence requirements and need for visibility

Companies are facing numerous supply chain risks. These risks result from natural catastrophes (e.g. floods or earthquakes), man-made accidents (e.g. technological breakdowns), or intentional man-made attacks (e.g. theft or terrorism) (Markmann et al., 2013). Therefore, supply chain risk management (SCRM) has become a key area of interest (Fan and Stevenson, 2018). For the purpose of this paper, the focus is set particularly on supply chain risks for VCR. In the past, firms used to consider mainly first tier suppliers and direct customers. Now, an extension to the concept of the ‘ultimate supply chain’ can be observed, which “includes all the organizations involved in all the upstream and downstream flows of products, services, finances, and information from the ultimate supplier to the ultimate customer” (Mentzer et al., 2001, p. 4).

A key change in the external environment that increases a firm’s internal relevance of the ‘ultimate supply chain’ stems from the emergence and proliferation of *due diligence requirements*. Due diligence originally refers to a thorough investigation of the financial operations of a company prior to mergers and acquisitions (Sinkin and Putney, 2014). Yet, with regard to VCR, the concept has been increasingly used as well in other frameworks and contexts. In the context of human rights, it describes the steps a company must take to identify, prevent, mitigate, and account for averse human rights impacts (Bonnitcha and McCorquodale, 2017). In the context of conflict minerals, it translates to proactively managing supply chains and thereby helps to reduce the likelihood of the use of conflict minerals (Hofmann et al., 2018). In the context of export control, due diligence refers to the diligence obligations of the exporter (European Parliament and Council, 2011).

Due diligence requirements thus represent significant changes in stakeholder expectations that equally affect TC and SSCM. This goes hand in hand with significant changes in the relevant external expectational constraints. To start with, due diligence does not stop with first or second tier suppliers, thus defining, in the extreme, a responsibility for the ultimate supply chain. What is more, due diligence violations increasingly create the risk for severe sanctions. In early 2019, the German Development Ministry drafted a law on mandatory human rights due diligence for German companies that sanctions violations with fines of up to five million Euros, imprisonment of executives, and exclusion from public procurement procedures in Germany (Business & Human Rights Resource Centre, 2019). Again, it is not the sustainability issues (inside-out effects) themselves that directly create the eminent outside-in effects for the firm but structural changes in the external environment that *make* them highly relevant for the firm. Note that these external requirements hold the firm as a whole accountable and thus do not distinguish between SSCM or TC responsibilities.

A further change in companies' external environment is that social media and ICT can easily bring sustainability violations to the attention of a global audience (Aula, 2010). Together with expanding due diligence requirements, major VCR issues can thus occur at the weakest link of the supply chain (Lummus et al., 1998), yet rapidly fire back to the focal firm. This can start at the raw material stage (Mena et al., 2013) or at distant actors beyond the first tier. Many VCR risks therefore stem from sustainability-related uncertainty and low supply chain visibility (Busse et al., 2017). Not only does visibility decrease with rising supply chain distance, often VCR issues are not visible in the end product (Busse et al., 2017, p. 90). Companies are confronted with situations where they lack knowledge about supply chain actors and their activities and therefore "the supply chain as a system is [...] difficult to predict and control" (Carter et al. 2015, p. 90).

Against this background, *supply chain visibility* becomes a critical prerequisite for businesses to fulfill their VCR and to respond to changing external requirements, notably due diligence. The concept of visibility reflects that stakeholders for both SSCM and TC topics require increasing transparency and traceability throughout all stages of the supply chain (Carter and Easton, 2011; Closs et al., 2011; Marucheck et al., 2011; Reefke and Sundaram, 2017). While there are different interpretations for supply chain visibility (Garcia-Torres et al., 2019, p. 93; Tse and Tan, 2012, p. 51), this paper follows Busse et al. (2017, p. 21), who regard increasing supply chain visibility (e.g. of material flows, products, processes, and actors) and the "sharing of information between different supply chain stages" as a key factor for identifying and assessing supply chain sustainability risks. Thus, for the purpose of this paper, the broader concept of supply chain visibility (Timmer and Kaufmann, 2017, p. 346) is regarded as the basis for exercising due diligence and other proactive measures fostering VCR and its increasing complexity.

In the literature, scholars emphasize that visibility in upstream and downstream supply chain operations requires closing existing communication gaps (Carter and Easton, 2011). Yet, so far, the focus lies on reducing VCR complexity through "more collaboration and communication *along the chain* [emphasis added] to ensure more sustainable and responsible conduct" (Boström et al., 2015, p. 3). What is also needed, however, are novel "organizational practices and learning processes" (Garcia-Torres et al., 2019, p. 87), also *within* the firm. In fact, closing communication gaps not only refers to the alignment of actors along the value chain but also to the intra-organizational alignment of corporate functions.

In sum, the quest for supply chain visibility thus creates a case for aligning the functions of SSCM and TC. With regard to potential VCR risks, both functions possess relevant information regarding different, yet increasingly overlapping subsets of value chain issues and value chain parts. As due diligence requirements spell out more holistic forms of value chain responsibility, these changes in the external environment favor exploring the potential for the internal alignment of SSCM and TC.

4.4. The potential of functional alignment

The fact that (corporate) environments are unlikely to remain stable but instead constantly evolve, is a sort of conventional wisdom in systems thinking (Child and Rodrigues, 2011; Terreberry, 1968). As (Child and Rodrigues, 2011, p. 804) maintain, "as their environments become more complex and turbulent, [...] organizations have to find appropriate ways of coping with these new challenges (Tetenbaum, 1998)".

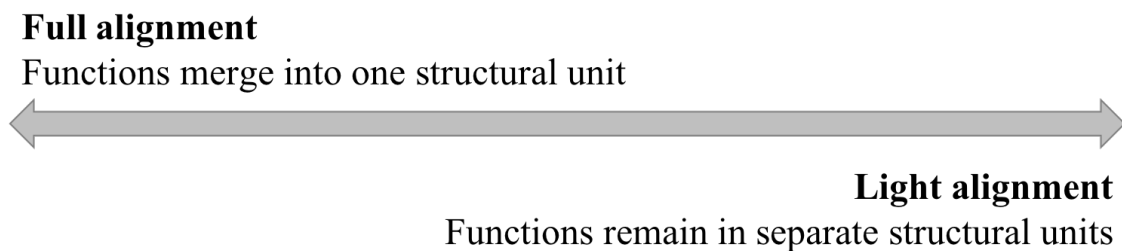
The previous sections argued that the external environment for VCR has changed since SSCM and TC had emerged as two originally separate corporate functions. In the external sustainability debate, previously more distant stakeholders such as NGOs and governments are increasingly connected. The line between legal compliance issues and non-legal stakeholder expectations continues to blur. Topics like human rights, hazardous chemicals, or conflict

minerals that highlight the interdependencies of different sustainability dimensions have become more prominent. Finally, increasingly integrative external requirements such as due diligence duties widen the firms' responsibility for the ultimate supply chain, thus creating novel risks and increasing the importance of achieving (more) supply chain visibility.

This paper argues that these changes in a company's external complexity favor adaptations in its internal complexity. More specifically, a continued strict separation between SSCM and TC does not seem to be effective and efficient to address the environmental changes discussed above. Rather, adequate forms of aligning SSCM and TC could foster supply chain visibility and thereby help the business firm to manage increasing external VCR complexity and expectations.

So, what does alignment mean theoretically? System theory underlines that changes in a company's functions evolve as changes of the underlying organizational *structures* (Schneider et al., 2017). A functional alignment of SSCM and TC thus needs to investigate the underlying operational structures and explore how these can be adapted in order to increase the efficiency and effectiveness of the operations that build upon them. Seen from this perspective, there can be various forms of alignment that fall on a spectrum of structural outcomes (see Figure 1). This spectrum ranges from full alignment, where both respective functional structures (e.g. departments/teams) merge into one corporate structural unit, to lighter forms of alignment such as the use of shared information systems. In the latter case, both functions keep their autonomous structures and find other possibilities to cooperate.

Figure 1. Spectrum of structural outcomes of functional alignment



While companies might differ in their optimal form of structural alignment, this article has used system theory to argue that there is a conceptual case for some form of internal alignment of SSCM and TC. To the authors' knowledge and personal professional experience in a TC department of a world-leading MNE, however, companies have so far abstained from systematically exploring this potential. The following section addresses this phenomenon by showing that system theory can not only make the case for aligning SSCM and TC. Evolutionary system theory perspective can also show why such alignment is likely to face structural challenges.

5. The Challenge of Alignment

From an evolutionary system theory perspective, the key to understanding why companies might struggle to explore and realize the potential of aligning the two VCR sub-functions of TC and SSCM lies in the conceptual distinction between *functions* and their underlying *structures* (Worren, 2016). As discussed above, functions describe *what* is achieved for the system while structures refer to the stable components of the system that describe *how* the relevant operations are carried out. This distinction allows highlighting a critical challenge for relating a system's external and internal complexity. While functions significantly respond to what is relevant to prosper in the external environmental, structures not only refine but build upon the system's existing internal complexity. As a consequence, when changes in the external environment call for changes of what a function does, the system cannot evolve a response from scratch but is constrained by how it already works. A key concept that captures this challenge

is the notion of *organizational path dependencies*. The following section serves to discuss this concept in more detail and to relate it to the evolutionary system theory perspective on VCR developed in in this article.

5.1. Combining organizational path dependency and evolutionary system theory

Studies in management and organization theory focus on the reasons for organizational inertia and provide useful perspectives of the historical imprinting of decision-making (Sydow et al., 2009). This paper follows an important concept that is often associated with path dependency, namely, ‘history matters’ (Nooteboom, 1997; Sewell, 1996). Decisions and events in the past determine today’s options and choices for taking action. Companies cannot freely adapt to environmental change but instead have a limited freedom of choice. When companies internalize and operationalize external changes, most of them will not be able to make changes on the green field but within existing organizational structures.

Another important feature of path dependency theory is a state of ‘lock-in’ (Arthur, 1989). “In organizations, path dependence translates into features (e.g. capabilities) that persist over time and appear hard to change [...]” (Vergne and Durand, 2011, p. 370). In such a state, the organization is unable to adopt new ideas (Wagner et al., 2011) or cannot adequately respond to “changed internal or external circumstances” (Sydow et al., 2009, p. 695). Instead of developing new measures, functions and structural units are bound to existing paths and historical solutions (Leonard-Barton, 1995; Schreyögg and Kliesch-Eberl, 2007).

Combining path dependency theory with structuration theory, organizational lock-ins may be predominantly created by cognitive, normative, or resource-based rigidities (Giddens, 1984; Sydow et al., 2009). Thereby, self-reinforcing processes are important mechanisms to stabilize paths and eventually lead to an irreversible state of lock-in (David, 1985). Sydow et al. (2009) emphasize four mechanisms of self-reinforcing dynamics in an organizational path dependency context: coordination effects, complementarity effects, learning effects, and adaptive expectation effects.

The concept of organizational path dependencies can thus be usefully combined with the perspective of evolutionary system theory. For the purpose of this paper, these conceptual reflections allow analyzing to what extent the functional alignment of SSCM and TC is always constrained by both functions previous history within the firm – and the respective structures, which have already emerged in this history, including the existing organizational settings, hierarchies, organizational units, mechanisms and responsibilities in place. As SSCM and TC developed separately, the available options that the company can choose in the future depend on the accumulated knowledge and investment in one of the two functions (Vergne and Durand, 2011). Historic events in the environment (e.g. regulatory changes) and within an organization (e.g. corporate scandals) foster the process of further specialization of both functions.

Applying this sort of thinking to the more general debate on CSR, Tang et al. (2012) describe the development of complementary assets in different CSR dimensions. If for example, the SSCM function has learned necessary skills for an environmentally friendly manufacturing process, it might specialize in waste reduction, or the use of non-toxic chemicals. As the issues are related, it is likely that the organization is able to transfer this knowledge to product safety and quality issues to fulfill other stakeholders’ expectations. New stakeholder expectations, like the integration of human rights into the manufacturing process, require the development of additional skills, knowledge, and resources. When organizations have accumulated knowledge and efficiency in one dimension (Covin and Hull, 2010; Sydow et al., 2009), it is more difficult to develop new capabilities for unrelated dimensions (Tang et al., 2012). However, “[w]ithout such complementary capabilities and resources, a firm’s ability to diversify among different CSR aspects will be limited” (Tang et al., 2012, p. 1280), which, in path-dependency terms, “lock the [organization] into an inferior solution” (Sydow et al., 2009, p. 691).

5.2. Organizational barriers as system structures

Further exploring the link between system theory and the path-dependency literature, this section serves to shortly discuss three types of system structures that can create organizational barriers for the internal alignment of already existing functions, namely institutional, normative/professional, as well as cultural structures.

First, institutional structures refer to rule-guided behavior within the firm and its functions. Such structures can lead to ambivalent coordination effects. While coordination within one function (e.g. in the form of organizational rules or routines), facilitates efficient interaction among actors within that function (Sydow et al., 2009), such rule-guided behavior might cause difficulties when interacting with another function, which is characterized by different routines. In the case of SSCM and TC, different organizational routines can hinder a joint approach of external risks and challenges (Andreu and Ciborra, 1996). Therefore, the lack of flexibility, different formal processes, missing aligned documentation and reporting, as well as separated relationships with business partners can be considered manifestations of coordination barriers of alignment.

Note, however, that institutional arrangements need not necessarily create barriers for cross-functional alignment but can also facilitate processes of interaction and joint problem solving (van Bueren et al., 2014). Existing patterns and cross-functional networks, like regular meetings and communication platforms, help to foster collaboration between SSCM and TC. Additionally, consistent documentation requirements and shared reporting channels encourage communication and regular interaction. From a system theory perspective, such jointly used structures can serve as “*structural couplings*” (Baralou et al., 2012; Seidl and Becker, 2006) that connect separate (sub-)systems. Such institutional arrangements or routines can be reflected within the organizational structure or within internal processes. Yet, the more SSCM and TC are divided within the organizational structure, the more difficulties they are facing in their future collaboration.

Related to institutional arrangements is the second structural category of normative and professional barriers. SSCM and TC are highly specialized functions. Over time, they accumulated expertise and knowledge within a specific area. Such a development can be created by learning effects (Sydow et al., 2009): “The more often an operation is performed, the more efficiency will be gained with subsequent iterations [and] the operation becomes more skillfully performed (faster, more reliable, and with less errors)” (Sydow et al., 2009, p. 700). Furthermore, specialization within functions consists of employees with a particular professional background and education. While SSCM may require engineers to create more environmentally friendly production processes, lawyers or customs experts may fulfill TC export control requirements. Depending on the necessary capabilities to fulfill different tasks within the functions, a range of different personnel ranging from logisticians to IT specialists is required. People with “different skills from different functional disciplines, occupations or roles” (Oliveira et al., 2016, p. 406) might have a different mindset and work culture. Therefore, not all employees might be willing to contribute to some forms of alignment. Joint projects or teams are confronted with different thought worlds, communication barriers, and failures of interpretation and incorrect attribution (Majchrzak et al., 2012). This may result in “poorly defined or misunderstood functional strategies and/or misaligned functional objectives” (Oliveira et al., 2016, p. 406). Therefore, most likely, in their joint activities (e.g. transdisciplinary projects), conflicts arise (Moses and Åhlström, 2008) and they are neither unable to work in a collaborative manner, nor exploit complementary capabilities (Daspit et al., 2013). Such barriers can hinder the transfer of knowledge and expertise between different functions like SSCM and TC.

A third type of barriers relates to the organizational culture within the firm and different functions which, in turn, reflects past experiences (Schein, 1984). Oftentimes, organizational sensitivity to VCR issues depends on how powerful external pressures by different stakeholders are and have been before. Legal requirements are often the basis for VCR activities, but not all business sectors are equally strong regulated. There are other drivers to not only fulfill the regulatory minimum, but apply a beyond-compliance approach (Foerstl et al., 2015; Kurzrok and Hund, 2013; Lee and Kashmanian, 2013). Some organizations are concerned about reputational damage (Salisbury, 2013). This plays a bigger role when in the past an organization was subject to a corporate scandal (Salisbury, 2013). In other cases, VCR is reflected from a moral perspective. Such organizations respond to “societal pressure” with an increased “sense of duty” (Salisbury, 2013, p. 543). In any case, the behavior of top management is decisive, as it creates internal management support (Hofmann et al., 2018) for VCR activities and promotes an internal culture of VCR sensitivity. On the contrary, the lack of organizational VCR awareness and management support is an important organizational barrier for aligning SSCM and TC.

6. Discussion: Mapping a Research Agenda

So far, this article used evolutionary system theory to explain not only the co-evolution of two distinct VCR functions (SSCM and TC) but also the potential and challenges for their future alignment. The authors argue that changes in companies’ external value chain environments increasingly create the potential for an internal alignment of SSCM and TC to increase VCR effectiveness. At the same time, evolutionary system theory suggests that such alignment might face organizational barriers because of structural path dependencies. Building upon these previous reflections, this section uses system theory to discuss the boundary conditions and further research questions regarding the potential alignment of SSCM and TC in a firm’s VCR management.

From a system theory perspective, three questions deserve particular attention in future research. First, how does a company’s *environment* influence the case for aligning SSCM and TC? Second, coming to the *system* side of the equation, to what extent do a firm’s *existing structures* create barriers for functional alignment? Third, what are structural options for aligning the SSCM and TC function within the business system? To address these questions, this section formulates three environment-related, three system-related, and three alignment-related propositions that can be useful in guiding future research.

6.1. Investigating the role of the external environment

From a system theory perspective, functions serve to fulfill specific purposes that allow a system to survive and prosper in its environment. Against this background, the environment significantly defines *what* system functions need to achieve. The case for aligning SSCM and TC thus derives to a large degree from the extent to which the relevant external environments of the two functions overlap and raise shared or similar external requirements of *what* the systems needs to achieve.

Seen from this perspective, a precondition for aligning SSCM and TC is that both functions exist independently in the first place, thus creating potential areas of overlap in terms of issues, stakeholders, and external expectations. In this regard, the relevance of both functions is likely to increase with the degree to which a company’s products are complex and the degree to which its value chain operates across regulatory areas. On the one hand, more complex products are typically based on more complex inputs and tend to have a deeper supply chain, thus being often closer to issues like conflict minerals or child labor etc. upstream (Kim and Davis, 2016). On the other hand, more complex products (e.g. turbines, machinery) are more likely to be dual-use goods with regard to their downstream evaluation. At the same time, these

issues typically arise when corporate value chains operate outside a firm's domestic regulatory area. Value chain operations between, say, the USA and Canada (within NAFTA) or between Austria and Portugal (within the EU) raise fewer external concerns than when firms source from or sell to countries outside their domestic regulatory area. By this logic, SSCM and TC might play a bigger role (and thus have more opportunities to overlap) for an international turbine producer than, say, for a domestic brewery.

Against this background, future research can investigate the influence of industry and firm differences in terms of how the complexity of products and value chains as well as international cross-border characteristics influence not only the respective significance of the SSCM and TC functions but also create areas of overlap between these functions. **Proposition 1a** can thus be posited: *The more international and complex the value chain, the greater the relevance of SSCM and TC issues and thus the greater the potential for areas of overlap between the respective external requirements.*

A shared function of both SSCM and TC is to manage and secure important stakeholder relationships. As discussed above, however, SSCM and TC originally addressed different stakeholder groups. Future research can analyze more closely how external stakeholder requirements increasingly overlap and thus favor some forms of SSCM and TC alignment. One element in this regard is how stakeholders use a common 'sustainability' framing that covers previously unconnected issues. To illustrate, take 'drive sustainability', an automotive partnership of companies such as BMW, Daimler, Ford, Honda, Jaguar Land Rover, Toyota Motor Europe, and Volkswagen (Drive Sustainability and CSR Europe, 2018). The aim of this initiative is to promote sustainability within the industry through a common supply chain approach. The partnership's self-assessment questionnaire subsumes "export controls and economic sanctions" (Drive Sustainability and CSR Europe, 2017, p. 2) as a sub-responsibility for "global automotive sustainability (emphasis added)" (ibid., p. 1). Similarly, in the SDGs, goal 16 (Peace, Justice and Strong Institutions) highlights the reduction of "illicit financial and arms flows" and the combat of "terrorism and crime" (United Nations General Assembly, 2015, pp. 25-26). As important external stakeholders such as the Global Reporting Initiative or investors expect companies to report their sustainability performance with regard to the SDGs (Betti et al., 2018; GRI et al., 2015), the expanding scope of the sustainability notion thus brings previously separate SSCM and TC issues together in a shared framework. Future research can thus investigate how such changes in the sustainability framing (expressed in sustainability reporting, rating, investor questionnaires, etc.) influence the case for an internal alignment of SSCM and TC. **Proposition 1b** can thus be posited: *The greater the overlap in terms of external stakeholders and the more external requirements are formulated through a shared sustainability frame, the greater the case for aligning SSCM and TC topics internally.*

While more encompassing framings of sustainability can lead to a topical alignment of previously distinct issues in the firm's environment, due diligence requirements increasingly attribute responsibility for the ultimate value chain, thus creating overlapping external expectations for upstream and downstream parts of the value chain. Future research can investigate how such due diligence requirements bring previously separate compliance considerations together, thereby increasing the importance of improving supply chain visibility and thus influencing the case for aligning SSCM and TC. **Proposition 1c** can thus be posited: *The more external requirements call for due diligence for the ultimate supply chain, the greater the case for aligning SSCM and TC processes.*

6.2. Investigating the role of existing system structures as barriers

The case for aligning SSCM and TC derives from a changing external environment. Yet, as the concept of organizational path dependencies explains, existing structures may hinder the system in freely adapting internally to such external change. From a system theory perspective, the

conceptual reason for this challenge lies in the difference between functions and structures. While functions describe what a system needs to achieve, structures are the basis for how system operations are directed to generate specific system achievements (Schneider et al., 2017). For Luhmann, the structures of a system are not externally given but are themselves the product of the system's own operations (Schneider et al., 2017). This means that the longer structures are reproduced within the system, the more stable the structures emerge. Future research could thus test how the age of the respective functions influences the rigidity of their underlying structures. If history matters (Nooteboom, 1997; Sewell, 1996), a longer history of operating separately will matter more than a shorter history. **Proposition 2a** can thus be posited: *The longer the two functions of SSCM and TC have existed independently, the more structural inertia will inhibit their alignment.*

From a system theory perspective, SSCM and TC can be conceptualized as elements of a firm's functional differentiation (Müller and Powell, 1994; Schneider et al., 2017). As specialized sub-systems, both operate in their own logic and represent for each other a part of the system's internal environment (Müller and Powell, 1994). System theory underlines the self-referential nature of such (sub-)systems. In other words, each function achieves its specific contribution through specific operations. Employees with a legal background will address an issue with a different logic than employees with an engineering background. This specialization is a double-edged sword. The more specific sub-system operations are, the more focused and effective the function can get, yet also at the cost of being operationally closed to everything else. Against this background, differences in how the functions work establish structures that are productive, yet also create boundaries to others functions. Future research can thus analyze how differences in organizational cultures but above all differences in professional standards result in underlying structures that favor different – and thus difficult to align – functional logics. **Proposition 2b** can thus be posited: *The greater the professional distance between employees in the SSCM and TC function, the more difficult will be a functional alignment of both functions.*

According to system theory, organizations such as firms are social systems (Seidl and Becker, 2006) (with their functions being sub-systems that increase internal complexity through functional differentiation). In system theory, these social systems operate and reproduce themselves on the basis of *communication* (Cooren and Seidl, 2019). By this logic, structures are particularly relevant in determining how communication unfolds within the system. In organizations, some of the structures that channel communication can easily be changed. To illustrate, take the hierarchical line of command that structures how supervisor and subordinates communicate. Yet, this structure can change overnight when, for example, a company's organizational chart is reorganized. In contrast, spatial structures, including in which building or location a functional team or department is based, also largely influence communication, yet cannot be changed as easily. To illustrate, take a major MNE where the TC department is located in one campus whereas the SSCM department is based in a different part of the city. Future research can thus investigate how the existing spatial structures, including office space, foster or hinder the functional alignment of SSCM and TC. **Proposition 2c** can thus be posited: *The greater the spatial distance between SSCM and TC teams, the less likely is functional alignment of both functions to emerge.*

6.3. Investigating structural options for functional alignment

Functional differentiation means that functions evolve as sub-systems that operate with their own, self-referential logic. As already alluded to above, this creates an interesting challenge. On the one hand, operational closure gives a sub-system its effectiveness and allows it to fulfill a specific function. On the other hand, this operational closure makes the sub-system blind to everything else outside its own logic, including the existence and contribution of other corporate

functions. As a consequence, overarching issues like VCR may affect the entire firm, yet SSCM and TC ‘see’ and address only parts of it and operate in silos without exchanging information or collaboration.

Against this backdrop, system theory underlines the importance of the concept of *structural couplings*. Structural couplings provide some form of meaningful connection between a system and its environment (which may consist of other systems). Take again the example of the moth discussed earlier. The hearing apparatus represents system structures (stable components of the moth system) that couple relevant environmental events (sound) into internal system operations (nervous activity) (see Roeder, 1965).

A special form of structural couplings occurs when two systems are structurally coupled to each other. If “an autopoietic system presupposes the complex achievements of the autopoiesis of another system and can treat them as if they were parts of the own system’ (Luhmann, 1995b, p. 153) [translation by Seidl and Becker]” (Seidl and Becker, 2006, p. 21). Luhmann calls this “*interpenetration*” (Seidl and Becker, 2006, p. 21). In other words, interpenetration allows two systems to ‘use’ the output of another system internally. For the purpose of this article, structural couplings and interpenetration thus describe the theoretical options for how the functions of SSCM and TC can exist as independent functions on the one hand and nevertheless align their operations on the other hand.

Like any organization or sub-system of it, SSCM and TC represent, according to system theory, social systems that operate on the basis of communication (Cooren and Seidl, 2019). Structural couplings that align both system’s operations are therefore above all to be searched in a firm’s system structures that channel communication. In this regard, future research can investigate how shared information systems allow aligning SSCM and TC through the sharing of data such as supplier information, country and issue risk assessment, stakeholder contacts and so forth. The joint use of modern ICT technologies including novel form of increasing supply chain visibility such as blockchain technologies, can serve to exchange information and align decision-making processes. **Proposition 3a** can thus be posited: *The more SSCM and TC use joint information systems, the more likely functional alignment between both functions can be developed.*

While business information systems and internal office ICT can foster communication between SSCM and TC, a system theory perspective maintains that the alignment of functional operations is not merely a matter of technological solutions. According to the concept of functional differentiation, functions and sub-systems specialize by evolving their own form of communication – by developing their own specialized language so to speak. These differences in communicative operations can lead to operational closure and functional self-referentiality. Against this background, ICT solutions that allow different functions to use the same communication channels do not guarantee that the functions actually understand each other.

What is needed, therefore, are structural couplings that translate information in a commonly understood language. A helpful conceptual distinction in this regard is Luhmann’s distinction between “codes” and “programs” (Luhmann, 1989). For Luhmann, communication systems operate by processing different binary “codes” that are operationalized through more elaborate “programs”. To illustrate, for the TC function, the binary distinction guiding decisions regarding business transactions could be the code “compliant/not compliant”. The “program” then refers to the criteria, protocols, methods etc. that are applied to resolve how a specific transaction is coded.

Seen from this perspective, an important structural coupling for aligning SSCM and TC could lie in the use of shared “programs” in the sense of categorizations, protocols, etc. that guide internal decision-making. One example of a mandatory international product nomenclature that can serve as a shared program and facilitate integrated information management is the Harmonized Commodity Description and Coding System (HS) originally developed by the World Customs Organization (WCO) in 1988. The HS classifies goods in a

structured and universally applicable manner with about 98% of international merchandise being categorized by a six-digit code, which allows to allocate each product in an exact commodity group. Originally designed to apply the correct customs tariff (WCO, 2017a), the HS has proven to be a ‘multi-purpose tool’ (WCO, 2017b) that serves in TC to monitor and control trade of dangerous goods. For SSCM, the HS could provide a useful common language as it nowadays enables governments to enforce regulation on goods, which have a social and environmental impact. In fact, environmental and social amendments were major features in the sixth edition of the HS Nomenclature, which entered into force on January 1, 2017 (WCO, 2015). Future research can thus investigate how shared programs such as common protocols like the HS can foster communication and alignment between SSCM and TC. **Proposition 3b** can thus be posited: *The more SSCM and TC use shared protocols or ‘programs’, the more likely they establish structures that enable functional alignment between both functions.*

Though counterintuitive for everyday thinking (Seidl and Becker, 2006), Luhmannian system theory does not conceptualize human beings as part of business systems but as psychic systems that populate an organization’s environment (Luhmann, 2018). Language, however, is a structural coupling that connects what is going on in people’s head (psychic operations) and in social systems (communicative operations).[2] This has an interesting consequence. Psychic systems can store in their minds information that stems from one communication context and then insert that information in a different communication context. Put differently, if the same psychic system (e.g. manager) is coupled to various communication systems (e.g. different team communications) it can indirectly connect communicative systems that are operationally closed from each other.

For future research, this perspective invites investigating how the bringing together of people from different functions can occur in a structured way that, indirectly, opens up options for information flow and ultimately functional alignment. One example could be a form of job rotation like in the case of BMW (Avery, 2005, p. 45). Here, BMW deliberately encourages employees to regularly rotate to other roles. This could be used to structure the experience sharing between related functions. A second approach that enjoys prominence is the idea of *communities of practice* (CoP). CoPs are “groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (Wenger et al., 2002, p. 4). For the joint management of VCR, CoPs could be a particularly promising approach, as they inter alia focus on the internal identification, exchange, storage and management of knowledge between structurally separated organizational functions or ‘silos’ (Corso et al., 2009; Forsten-Astikainen et al., 2017; Hemmasi and Csanda, 2009; see Manuti et al., 2017; Probst and Borzillo, 2008). The ability of CoP to enable exchange of knowledge, information, expertise and (best) practices thus represents a promising tool to break existing organizational path dependencies (see Forsten-Astikainen et al., 2017; Li et al., 2009; Sydow et al., 2009).

From a Luhmannian perspective, CoPs do not represent sub-systems of the firm as they do not follow the organizational logic of generating decisions. CoPs rather typically generate ‘interactions’, that is episodic, often face-to-face communications through joint theme-days, workshops, projects, or conferences. Future research can investigate how firms can organize and structure such issue-specific communication as an incubator for new inter-functional projects, e.g. addressing a common VCR issue such as conflict minerals. Action research could contribute to by establishing regular CoP workshops where internal stakeholders from different VCR-related functions present key achievements, milestones, and challenges, thus allowing mutual learning and knowledge creation and sharing. **Proposition 3c** can thus be posited: *The more structures like job rotation or communities of practice bring employees from different functions together, the more likely functional alignment between both functions can be developed.*

6.4. Further research

The authors presented further research areas *content-wise*, but the question remains how to address these *method-wise*. To explore and test how the company's *environment* influences the case for aligning SSCM and TC, the authors propose a multiple case study approach. By comparing e.g. different industries, comparative case studies can analyze differences in product complexity, international cross-border characteristics, or specific external stakeholder requirements.

For testing *system-related* propositions, the authors propose an empirical explorative approach. Particularly qualitative research in the form of expert interviews is suitable to 'talk with the field' and learn more about existing structures and barriers for functional alignment. This is the basis to find out what is happening in the various involved departments and develop tailored solutions for alignment.

As there are multiple options for the firm to create *structural couplings*, a research approach should be adapted to the evolutionary character of the business system. Particularly with regard to the further evolution of different functions, Delphi studies and other forms of scenario techniques are suitable to address alignment-related propositions.

7. Conclusion

In 1973, BMW was the first automotive company to establish a dedicated 'environmental management' unit as the firm responded to the increasing pressures from local stakeholders such as neighbors or the municipality who were concerned about local pollution (BMW AG, 2019). Other stakeholders such as trade-unions voiced expectations regarding social issues, leading to dedicated, yet separate structural units such as occupational health & safety. Over time, however, societal expectations within the business environment have embraced 'sustainability' as a more comprehensive concept that includes both environmental and social issues. As these issues became more aligned in the external environment, companies have developed integrated CSR or sustainability departments that reflect various forms of functional alignment internally.

This paper seeks to bring attention to a similar phenomenon that might be unfolding with regard to the discussion about corporate value chain responsibility (VCR). In practice, the two functions of sustainable supply chain management (SSCM) and trade compliance (TC) already tackle different aspects of VCR, without being necessarily aware of each other's activities and processes. Yet, real-life challenges along global value chains do not care about the different functional logics within a firm.

Against this background, this paper promotes a more encompassing perspective of sustainable development and a holistic concept of corporate value chain responsibility. In order to do so, this paper answers the following research question: *How can evolutionary system theory explain not only the co-evolution of two distinct VCR functions (SSCM and TC) but also the potential and challenges for their future alignment?* Bringing system theory to this debate, the authors have explained how both SSCM and TC emerged as responses of the business system to specific stakeholder requirements. In the more recent past, however, previously separate stakeholder requirements increasingly overlap in the external environment, thus creating a case for some form of internally aligning SSCM and TC. Yet, as the concept of organizational path dependencies suggests, existing system structures may inhibit such functional alignment.

In spelling out this argument, the article has made four contributions. First, it introduces evolutionary system theory as a powerful explanatory perspective to the field of VCR, SSCM, and TC. Second, this study aims to add the often overlooked, yet empirically relevant function of TC to the wider discussion on SSCM and corporate responsibility along the supply chain. By applying evolutionary system theory to the VCR debate, it, third, analyzes the potential and

challenges for aligning both functions. Forth, it spells out a research agenda and formulates testable propositions for further investigating the interplay of environment and system as well as the structural options for a functional alignment of SSCM and TC.

Notes:

1. Within the EU, the Council Regulation (EC) No. 428/2009 of May 5, 2009 sets a common legal framework for dual-use export controls. Following Art. 2, dual-use items are goods, software and technology, which can be used for both civil and military purposes, and can thus potentially be misused by customers.
2. In fact, the intense structural coupling between psychic systems and social systems through language is an example for the phenomenon of system *interpenetration* discussed above.

8. References

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Exploring corporate value chain responsibility in environments shaped by complexity, fragmented sustainability governance and changing stakeholder expectations

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