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Effects of the German Due Diligence Act on Supplier Selection in the Agri-Food Sector

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Abstract: Global supply chains in the agri-food sector are at risk of violations of human rights as well as labour and environmental standards. To address these risks, the German Due Diligence Act (LkSG for „Lieferkettensorgfaltspflichtengesetz") was enacted, mandating corporate human rights, labour and environmental due diligence. Despite its significance, there is limited research on the LkSG's impact on supplier management. This study aims to provide initial insights into how the LkSG affects supplier selection in the agri-food sector. We conducted qualitative analyses of expert interviews with fifteen company representatives from the German agri-food sector. The findings reveal that companies are confident in maintaining their current supply chains without systematically reducing their supplier base. They perceive the LkSG's legal requirements primarily as a task for supplier development rather than selection. While there was no significant increase in supplier selection criteria related to human rights and the environment, some companies have given these criteria greater importance. Future suppliers to the German agri-food sector will need to provide more detailed information on human rights and environmental risks. Additionally, companies have become more selective in their choice of certification and verification schemes.

Keywords: German Due Diligence Act, LkSG, Agri-Food Sector, Supplier Selection, Supplier Management, Human Rights and Environmental Due Diligence

1 Introduction

Global value chains in the agri-food sector are particularly vulnerable to human rights violations, labour standard abuses, and negative environmental impacts (e.g., Weiss et al., 2020; OECD, 2019). According to estimates by the International Labour Organisation (ILO) and the Walk Free Foundation, around twelve percent of the world's forced labourers are employed in agriculture (ILO et al., 2022), and approximately seventy percent of global child labour occurs in this sector (ILO, UNICEF, 2021). Additionally, the use of fertilizers and pesticides in agriculture can lead to air and water pollution, adversely affecting the health and livelihoods of local communities (Dhankhar, Kumar, 2023; Tudi et al., 2021). Agricultural workers face significant work-related risks, with the number of work-related accidents being twice the average for all other sectors (ILO, 2015).

Despite voluntary measures and corporate commitments to mitigate these issues, significant problems persist, leading to increased public pressure for more robust regulatory frameworks. This shift has resulted in the implementation of legally binding corporate due diligence regulations at both the national and EU levels (OECD, 2024). Such regulations transfer the responsibility for supply chain integrity directly to companies (Wieck et al., 2023). In Germany, the National Action Plan for Business and Human Rights was introduced in 2016, but a survey from 2018 to 2020 revealed that fewer than twenty percent of companies with more than 500 employees voluntarily adhered to its requirements (Dreiseitl, Richter, 2020). Consequently, the Act on Corporate Due Diligence Obligations for the Prevention of Human Rights Violations in Supply Chains (LkSG) was passed in 2021 (German Federal Parliament, 2021a, 2021b). The LkSG imposes binding rules that require companies to implement human rights and environmental due diligence throughout their global supply chains. German-based companies with a specified number of employees must identify, monitor, and mitigate risks of human rights and labour standard violations, as well as specific environmental impacts, within their upstream supply chains (ibid.) These obligations extend to direct (1st-tier) suppliers on a regular basis and to indirect (nth-tier) suppliers when companies become aware of potential risks.

While the LkSG applies to all economic sectors, its impact on the agri-food sector is of particular interest due to the sector’s aforementioned social and environmental challenges, such as child labour or deforestation (Pendrill et al., 2022), and Germany’s relevant share of world imports of agricultural commodities (in 2023: cocoa 9%, bananas 7%, coffee 10%; ITC, 2024).

Empirical research on how companies adapt to new mandatory due diligence regulations remains fragmented, with most studies focusing on earlier regulations in the US and the UK (Dupont et al., 2024). For instance, the Dodd-Frank Act in the US, which regulates the sourcing of minerals, has been shown to have unintended negative consequences in the countries of origin (Stoop et al., 2018; Bloem, 2022). Similarly, the UK Modern Slavery Act and other regulations aimed at increasing supply chain transparency have primarily led to an expansion of reporting practices, often resulting in large volumes of low-quality data (Dupont et al., 2024). Sectoral differences are evident, as industries exposed to higher public scrutiny tend to demonstrate greater compliance with such regulations (ibid.).

Concerns about unintended consequences are also prevalent in the case of Germany’s Supply Chain Due Diligence Act (LkSG). Critics warn that companies may disengage from high-risk suppliers, potentially leading to adverse social outcomes in the affected countries (Felbermayr et al., 2022). Initial evidence from the apparel sector suggests a tendency toward this „cut-and-run“ strategy (Kolev-Schaefer, Neligan, 2024), which could undermine the regulation’s intended objective of improving human rights and labor standards in global supply chains.

Against this backdrop, the broader question arises of how global supply chains will restructure in response to new regulatory requirements—whether at the macroeconomic or microeconomic level (Wilhelm, 2024). This paper focuses on the microeconomic dimension, addressing a key research gap by examining how companies adapt to the LkSG, with a special focus on supplier selection, which in turn may have an impact of a possible reconfiguration of global supply chains (Wilhelm, 2024). Furthermore, Germany’s experience will provide critical insights for the upcoming EU directive on due diligence, as companies across member states will soon face similar regulatory obligations.

Thereby, this study examines the effects of the LkSG on supplier selection among companies in the German agri-food sector. The LkSG imposes due diligence obligations on companies concerning their first-tier suppliers (direct suppliers) as a standard requirement and extends these obligations to nth-tier suppliers (indirect suppliers) when risks become known. Accordingly, this study aims to capture the effects in both cases. Drawing on existing literature on earlier regulations, it can be inferred that the LkSG likely has a particular impact on supply chains in the agri-food sector, given that many agricultural commodities are produced in low-and lower-income countries[1], much like the minerals addressed by the Dodd-Frank Act in the US. Furthermore, companies in the agri-food sector are more directly exposed to public scrutiny, interacting with end consumers daily, which may make them more responsive to regulations than companies in other sectors, as suggested by Dupont et al. (2024).

We focus on a subsample of the agri-food sector, specifically products with global supply chains known to be associated with human rights and labour rights risks. Animal-sourced food products are excluded, as their supply chains are predominantly domestic and/or within the EU - except for animal feedstuff, which rather fall more under the scope of the EU Deforestation Regulation (EUDR) due to deforestation risks. Given the novelty of the legislation and the scarcity of data, we adopted a qualitative approach, conducting interviews with experts from procurement, compliance, and corporate social responsibility departments within the agri-food sector. These interviews were analysed using content-structuring qualitative content analysis.

Following this introduction, the study is structured as follows: first, we provide the key legal requirements related to supply chains and contextualize supplier selection. Second, we present the current state of research and derive our propositions. Third, we outline our methodology for data collection and analysis. Fourth, we present and discuss the results, organized according to our propositions. Finally, in the discussion, we interpret the findings, highlight limitations, and offer an outlook on future research directions.

2 Background

2.1 Legal Background: Requirements of the German Supply Chain Act for Supplier Management

The LkSG mandates corporate due diligence to prevent human rights, labour, and environmental violations along supply chains, shifting responsibility to German companies. Since 2023, it affects German companies with over 3,000 employees and international companies with over 3,000 employees in their German subsidiaries, impacting approximately 1,300 companies. In 2024, this threshold lowered to 1,000 employees, expanding the scope to around 5,200 companies (correspondence with the competent authority as of June 2024).

Companies under LkSG must minimize risks and prevent violations as outlined in Section 2. Obligations include establishing a complaints procedure, conducting annual risk analyses, implementing preventive and corrective measures, and documenting compliance. The complaints procedure allows stakeholders to report potential violations anonymously. Companies must evaluate and prioritize these reports through an ad hoc risk analysis.

Annual risk analyses are required for internal operations and direct suppliers, involving both abstract and concrete risk assessments. The assessments should evaluate sector- and country-specific risks and prioritize them based on probability, severity, and the company's influence (BAFA, 2022b). Companies must transparently and consistently document their risk evaluation and prioritization (BAFA, 2022b).

Preventive and remedial measures must be developed and monitored for identified risks. These measures should focus on developing existing business partners and be based on ap-

[1] As defined by the OECD for determining eligibility to receive Official Development Assistance (ODA). The list of eligible countries is updated every three years. In 2022, the threshold for low-income countries was a per capita GNI of USD 1,135 or less; for lower-middle-income countries, it ranged from USD 1,136 to USD 4,465 (https://www.oecd.org/en/topics/sub-issues/oda-eligibility-and-conditions/dac-list-of-oda-recipients.html). In this context, suppliers based in the group of Least Developed Countries (LDCs) are also included.

propriateness and effectiveness principles. The company's influence over the direct perpetrator, cooperation intensity, and severity of violations guide these efforts (Section 3 (2) LkSG). Measures are effective if they mitigate risks or prevent violations (Section 4 (2) LkSG).

Companies must publish a policy statement and an annual report. The Federal Office for Economic Affairs and Export Controls (BAFA) oversees compliance and can impose fines and exclude non-compliant companies from public tenders.

2.2 Theoretical Background: the Role of Supplier Selection in Supplier Management

The supplier management forms the interface between a company and its upstream supply chains. The aim of supplier management is to establish and maintain a supplier base that can provide the company with the necessary goods at the appropriate time, quantity, quality, and price (Helmold, 2023). Regarding a company's procurement requirements, the concept of quality encompasses the company's sustainability requirements for production (Fröhlich, 2015; Kretzschmar et al., 2021).

Various approaches exist in the literature for dividing supplier management into different parts. This paper is based on the approach of Akamp, Müller (2013), which divides supplier management into four parts: (1) supplier selection and evaluation, (2) supplier auditing, (3) supplier development and (4) supplier integration (cf. Figure 1). This approach was chosen because it explicitly focuses on sustainability-oriented supplier management of suppliers in low and lower-middle income countries, making it particularly relevant for analysing the impact of due diligence regulations such as the LkSG. Additionally, its structured breakdown allows for a comprehensive examination of different stages of supplier engagement, aligning well with the objectives of this study.

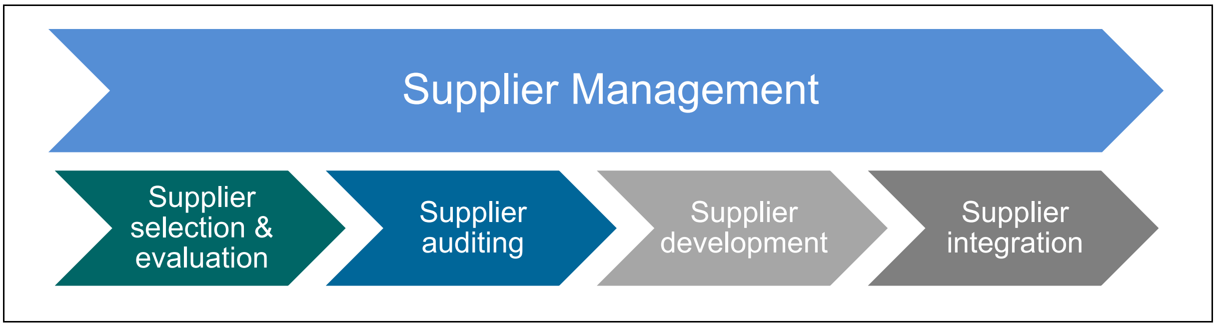

Figure 1. Parts of supplier management

Source: authors' illustration based on Akamp, Müller (2013)

Similar subdivisions can also be found in other studies (Rink, Wagner, 2007; Large, 2009). (1) Supplier selection and evaluation is chronologically the first step in the supplier management process. It involves identifying and evaluating potential suppliers and concluding contracts with selected suppliers (Beile, Vitols, 2024; cf. Rink, Wagner, 2007). In other words, this step refers to the process of working towards concluding a contract. This may include concluding a contract with a new supplier as well as extending a contract, or expanding cooperation with an existing supplier (cf. van Weele, 2018). This characteristic enables the differentiation of supplier selection and evaluation from part (3) supplier development and part (4) supplier integration due to the temporal threshold of the contract conclusion. The latter two focus on developing and cooperating with existing suppliers and take place after the contract has been concluded (Akamp, Müller, 2013; Rink, Wagner, 2007). Only part (2) supplier audit, which serves to collect data, can extend over the entire period of the supplier management. For example, an audit can be carried out to check the suitability of a supplier or to assess development goals (Helmold, Terry, 2016; Starmanns et al., 2021).

There is a congruence of objectives between supplier selection and supplier development. Both share the overall objective of supplier management, which is to establish and maintain an optimal supplier base for the company. The difference lies in the approach to achieving this goal. Supplier development aims to further enhance the capabilities of existing suppliers to meet the company's requirements, while supplier selection aims to identify and include suppliers with already appropriate characteristics in the supplier base (Rink, Wagner, 2007).

As supplier management activities aim to build and maintain a supplier base, determining the appropriate size of the supplier base is also necessary (Helmold, Terry, 2016). If for instance size of the supplier base is reduced, it may affect supplier selection, as companies may need to adjust their supplier selection criteria (cf. Helmold, Terry, 2016). Therefore, changes in the size of the supplier base are also subsumed to step (1) supplier selection and considered in the scope of this study.

3 Propositions

3.1 Literature Review

A literature review was conducted to identify relevant literature on the impact of the LkSG on supplier selection. The literature review was not limited to peer-reviewed entries. The search followed the following structured approach (cf. Figure 2): The review included literature in both English and German, using *Google Scholar* as the sole database. To ensure a focused search, the search field was restricted to titles only. A total of 188 entries were initially identified through multiple search strings, including both English and German synonymous terms such as *„LkSG"*, *„Lieferkettengesetz"*, *„German due diligence"*, and *„German supply chain act"*. The number of results for each term varied, with „Lieferkettengesetz" (41), „LkSG" (27), and „Lieferkettensorgfaltspflichtengesetz" (28) being the most common.

The selection process followed four stages. In the first screening, 91 entries were excluded for being duplicates, student theses (Bachelor/Master), non-English or non-German, commentaries, or lectures. In the second screening, abstracts of the remaining 97 entries were assessed, and 83 were excluded for not addressing the LkSG's impact on supplier management. In the third screening, the full texts of 14 remaining entries were reviewed, resulting in the exclusion of six that did not specifically examine supplier evaluation, selection, sourcing decisions, or supplier base changes. One additional widely cited study was included as an exception, bringing the total number of relevant studies to nine (cf. Appendix 12.1 for an overview of the individual stages).

None of the literature entries found allows for direct conclusions to be drawn regarding the impact of the LkSG on supplier selection in the agri-food sector. Six of nine entries describe sector-independent (expected) effects on supplier selection Haupt et al. (2021); Schöbel, Hellwing (2021); Konrads, Walter (2022); Brandenburg et al. (2023); Beile, Vitols (2024); BDI (2024). Two entries refer to the apparel industry Kolev, Neligan (2022); Kolev-Schaefer, Neligan (2024), while another entry pertains to the metal and electrical industry Felbermayr et al. (2022). Due to the novelty of the LkSG, many of the reviewed studies fall into the category of grey literature, which comes with certain limitations, including the absence of peer review and potential biases when commissioned by industry initiatives or similar entities (cf. Limitations). We acknowledge these constraints and carefully consider them when incorporating these studies into our discussion of the results. Based on these studies and the broader literature on supplier management, we derive three key propositions. These three propositions were selected because they capture the most discussed aspects of supplier selection under the LkSG as highlighted by the cited studies. Each proposition is grounded in prior research and/or public discussion with regards to due diligence in supplier management. The following section outlines how the existing literature informs each proposition in detail.[2] They guided the design of the semi-structured questionnaire that we used in the expert interviews.

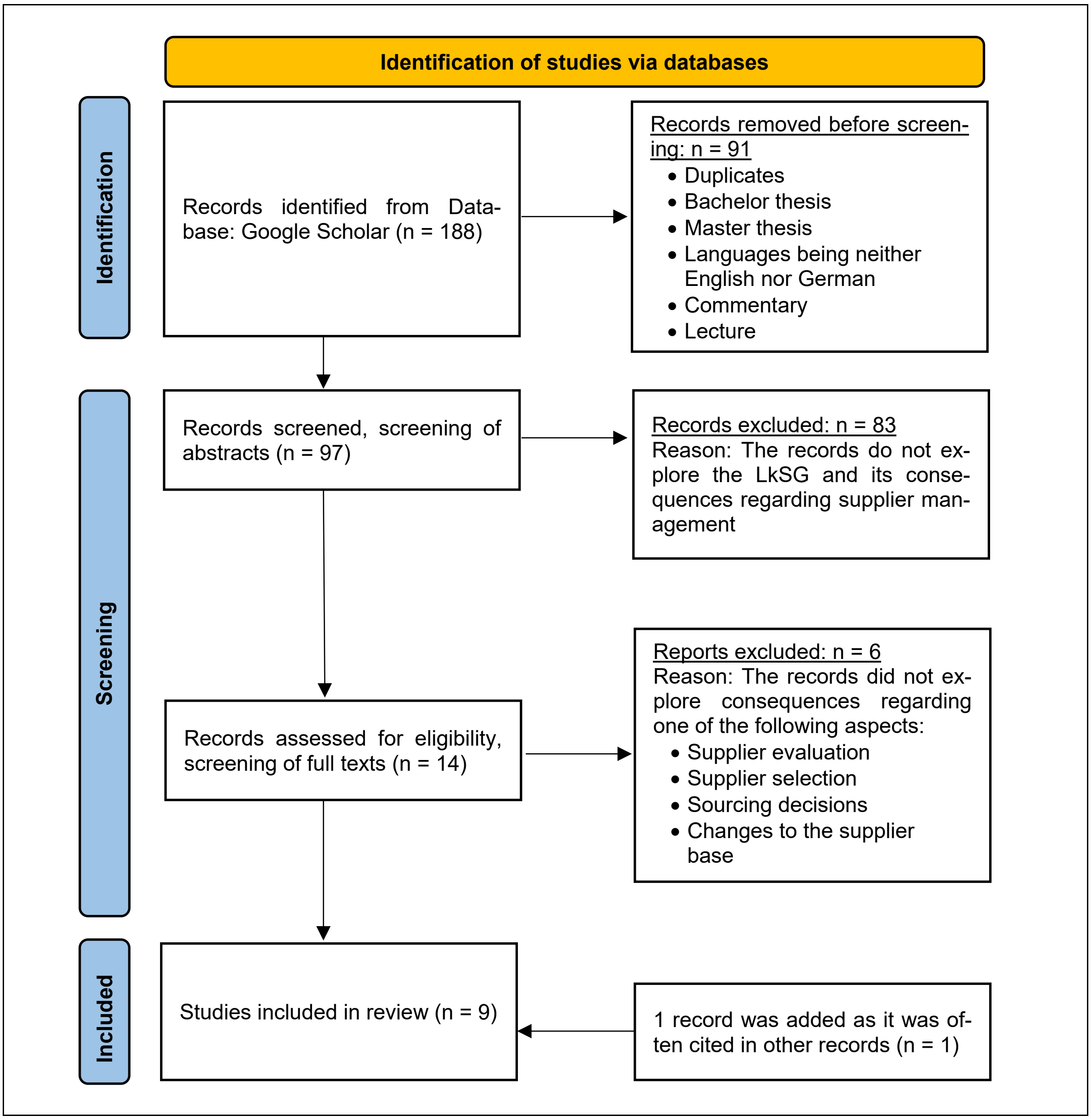

Figure 2. PRISMA flow diagram for systematic reviews

Source: authors' illustration based on Page et al. (2021)

[2] The studies from the literature review are marked by an asterisk.

3.2 New Criteria and Increased Weight of Sustainability in Supplier Selection (P1)

When evaluating and selecting suppliers, companies need to meet a variety of their own and external requirements (Taherdoost, Brard, 2019). These requirements are reflected in the selection criteria used to measure and differentiate supplier performance and potential. Currently, common supplier selection criteria include the following categories: Cost, Quality, Delivery, Financial Stability, Social, and Environmental (Stević et al., 2019; Nugraha et al., 2019; Morssi, 2021; Dutta et al., 2022; Radivojević et al., 2022; Xie et al., 2022; Hailiang et al., 2023).

With the introduction of the LkSG, companies face new requirements arising from legal obligations. As seen, legal obligations lead companies to adjust the criteria and their weight within the supplier selection (Zhu and Sarkis, 2007; Seuring, Müller, 2008; Iirajpour et al., 2012; Propper, Knight, 2013; Radley, Vogel, 2014; Sancha et al., 2015; Winter, Lasch, 2016; Nugraha et al., 2019; Nasri et al., 2022). This is either to register and control risks related to the legislation, or to avoid them (Seuring, Müller, 2008; Sancha et al., 2015; Winter, Lasch, 2016). Currently, the literature shows an overlap between the common criteria used in supplier selection and some of the protected interests of Section 2 LkSG. For example, the social category often includes criteria related to workers' rights and safety, and the environmental category often includes criteria related to the handling of hazardous, polluting waste (Nugraha et al., 2019; Stević et al., 2019; Morssi, 2021; Dutta et al., 2022; Radivojević et al., 2022; Xie et al., 2022; Hailiang et al., 2023). Some companies already apply zero-tolerance criteria in their supplier selection for some of the protected interests of the LkSG, such as child labour or forced labour (Starmanns et al., 2021). Beile, Vitols (2024*) find that companies consider sustainability aspects, sometimes including human rights aspects, in procurement processes. However, they did not find information on how companies evaluate and prioritize these factors compared to other decision-making criteria nor whether the LkSG results in changes considering sustainability aspects, their relative importance (i.e., weighting), and the supplier code of conduct.

A comprehensive consideration of all protected interests as covered by the LkSG in supplier selection criteria is still pending (Winter and Lasch, 2016; Weiss et al., 2018).

Therefore, the first proposition is: *As a result of the LkSG, companies will include more criteria related to due diligence in supplier selection and assign greater weight*[3] *to them (P1).*

3.3 Stronger Focus on Certifications (P2)

Recent surveys show that the implementation of the LkSG results in extra efforts for the companies directly affected (BDI, 2024*; Seller, Upmeier, 2023*). Among other things, non-transparent supply chains, low acceptance of the LkSG among business partners, the monitoring of suppliers and a lack of own capacities (e.g., workforce and know-how) for the implementation of the LkSG pose challenges for many companies (Klinger et al., 2016; Weiss et al., 2018; Seller, Upmeier, 2023*). In order to meet these challenges, companies could increasingly rely on certifications when selecting suppliers in the future (Nugraha et al., 2019; Wirtschaft and Menschenrechte, 2023; Seller, Upmeier, 2023*; BAFA, 2022b; Nolte, 2016; Delmas, Montiel, 2009; Lee et al., 2009; Handfield et al., 2002).

In the agri-food sector various certifiable standards exist (Weiss et al., 2020) that overlap with the requirements of the LkSG[4]. Yet, according to the law, certifications cannot free a company

[3] In this context, 'weight' refers to the relative importance assigned to specific supplier selection criteria in decision-making processes, which may be reflected in formal scoring models or ranking systems of companies.

[4] These include the standards of Fairtrade, Food Security Standard, Rainforest Alliance, Fair for Life, World Fair Trade, Naturland Fair, Social Accountability International, Ethical Trade Initiative, Global Coffee Platform, 4C Services (SAI, 2014; Fairtrade International, 2015; Ethical Trade Initiative, 2018; Fair for Life, 2018; 4C Services

from the responsibility of fulfilling the obligations of the LkSG (German Federal Parliament, 2021a), but it can support a company in the implementation of the Supply Chain Act in various ways (Wirtschaft & Menschenrechte, 2023; BAFA, 2022b). (1) A certified supplier possesses an infrastructure for collecting and documenting the data for the subjects covered by the respective standard. (2) The data collected in the context of certification enhances supply chain transparency and thus helps to identify LkSG-relevant risks in one's own supply chain (Stahl, Strausz, 2016; Karipidis et al., 2020). (3) Overall, transaction costs are reduced as companies do not need to collect data, audit suppliers etc. on their own. (4) By working with certifiers, the human rights and environmental situation of suppliers has improved in some cases, reducing the risk of violations of the LkSG (Blackman, Rivera, 2010; Newsom et al., 2020; Kiura, Langat, 2023). For companies, this reduces the risk of future costs or reputational damage. (5) In case of violations by certified suppliers, associated organisations can provide expertise and support companies in developing necessary measures (Rocha et al., 2021; Rainforest Alliance, 2023c, 2023a; Fairtrade International, 2023; Ethical Trade Initiative, 2017). However, it should be noted that certain standards may exceed the scope of LkSG. For example, the Global Coffee Platform (2021) and Naturland (2023) both overlap with the LkSG in terms of human rights but go beyond it in terms of environmental requirements. From a business perspective, adherence to the LkSG may result in „over-compliance", leading to added expenses. Furthermore, several NGOs and experts have criticised many certification standards for a lack of transparency, a lack of impact or quality deficiencies in their auditing methods (Clean Clothes Campaign, 2019; Müller-Hoff, 2021; Beile, Vitols, 2024*). This criticism is echoed by findings of studies with farmers, labourers and cooperatives in the producing countries (Meemken et al., 2019; Dietz et al., 2022).

The supply side, the standard setters, have recognised the demand for social standards by the German Supply Chain Act. They have adjusted their standards accordingly and advertise how they can support compliance with the LkSG (Fairtrade International, 2023; Rainforest Alliance, 2023b). Therefore, the second proposition is: *The LkSG will lead companies to increasingly consider certifications when selecting suppliers (P2).*

3.4 Reduction of the Supplier Base (P3)

The introduction of the LkSG increases the complexity of the agri-food sector's procurement market (Hahn, 2002; Felbermayr et al., 2022*). The obligations associated with the act lead to an increase in costs and potential risks per supplier (Felbermayr et al., 2022*; Erdmann, 2022; Kolev, Neligan, 2022*; BDI, 2024*). The cost of implementing the LkSG therefore increases with the size of the supplier base (Felbermayr et al., 2022*). This incentivises companies to reduce their supplier base and thus their scope of responsibility, in order to minimise or avoid procurement risks (Felbermayr et al., 2022*; BDI, 2024*). For example, the German textile discounter Kik reduced its number of suppliers from 600 in 2012 to less than 400 in 2016 following a fire at a supplier (Lother et al., 2022; KiK Textilien und Non-Food GmbH, 2020). For the entire apparel sector in Germany, Kolev-Schaefer, Neligan (2024*) find that one year after the introduction of the LkSG, companies had already withdrawn from risky regions. High implementation costs of a large supplier base, especially when suppliers are based in high-risk regions, is seen as an incentive to either reduce the number of suppliers (Felbermayr et al., 2022*; BDI, 2024*) or to integrate upstream processes within the company or to do both (Felbermayr et al., 2022*; Kolev-Schaefer, Neligan, 2024*).

When considering reducing their own supplier base, companies need to weigh up the implementation effort and risks associated with the legislation against the impact that a change in the number of suppliers has on other aspects of procurement (Li et al., 2014). This includes the distribution of bargaining power, the prohibition of supply shortages, and volume-related price discounts (Burke et al., 2007; Babich et al., 2011; Hahn et al., 1986). The extent to which

GmbH, 2020; Gamba et al., 2020; Rainforest Alliance, 2020; Global Coffee Platform, 2021; Fair for Life, 2022; Naturland, 2023).

the consequences of the LkSG are significant will vary between the different product groups that a company purchases, as the optimal number of suppliers also varies between product groups (Fröhlich, 2015). For product groups where companies already work with a small number of suppliers, the implementation effort and risks of the LkSG are less decisive. For product groups in which companies have a larger and more diversified supplier base, a reduction seems more likely, as the implementation effort increases with the size of the supplier base (Felbermayr et al., 2022*).

This could also apply to companies in the German agri-food sector. Therefore, the third proposition is: Companies will reduce the number of their suppliers for some of the procured product groups because of the LkSG (P3).

4 Research Methods

4.1 Method of Analysis

To explore the propositions, a purposely collected data set of expert interviews was analysed using a content-structuring qualitative content analysis. A qualitative approach was chosen to not only answer the propositions, but also to leave room for explanations and motivations that are difficult to capture in a quantitative approach. The qualitative content analysis followed the approach by Kuckartz, Rädiker (2022). We selected this approach because it provides a structured yet flexible framework for systematically analysing qualitative data while allowing for both deductive and inductive coding. This was particularly well-suited to our study, as we began with predefined categories based on our research questions but also allowed new themes to emerge from the data. It also allows for hierarchical coding, which is important in capturing the different levels of detail in our data.

4.2 Setting, Sample and Recruitment

An internet search was conducted to identify companies that are or will be directly obligated by the Supply Chain Act and process or trade one of the following subgroups of goods or their derivatives: (1) tropical fruits, (2) nuts and dried fruits, (3) fruit and vegetable juices, (4) cocoa and cocoa products, (5) spices, (6) vegetable oils and fats, (7) coffee and (8) tea and mate (Destatis, 2023). The selection of goods and their derivatives was guided by the products in the agri-food sector most significantly impacted by the German Supply Chain Act, with a particular emphasis on human rights and labour rights issues and global supply chains. Unlike the Corporate Sustainability Due Diligence Directive (CSDDD), which considers all suppliers, the German Supply Chain Act primarily focuses on direct suppliers. Consequently, our subsample excludes certain product categories, such as animal-sourced food products, which were deemed less relevant within this regulatory framework due to their mostly domestic/EU sourcing and global link only via indirect suppliers. Based on these restrictions, we systematically considered the supermarket landscape, identifying all major companies. Using the official company register[5], we verified which companies met the size criteria required to fall under the LkSG. Additionally, we included companies that had received media coverage related to the LkSG, which led to the inclusion of both companies below the size threshold and trade associations. Thereby, we identified 53 companies. In the case of affiliated companies, only the parent company was considered. Eligible interviewees included employees involved in the selection of suppliers for a listed product subgroup and those responsible for implementing the LkSG in their company. The selected individuals were contacted via publicly accessible channels using personalised letters and a standardised project teaser (see Supplementary Material) including the questionnaire.

[5] https://www.unternehmensregister.de/ureg/index.html?dest=ureg&language=en

4.3 Data Collection

Fourteen out of the 53 companies, along with one association, were interviewed between November 2023 and the end of January 2024. By that number of interviews a sufficient degree of thematic and data saturation was achieved, indicated by new answers/data repeating what was expressed in previous answers/data and by the identified themes exemplified in the data (Saunders et al., 2018).

The semi-structured expert interviews were conducted either in person (1 interview) or via video conference (14 interviews) and lasted an average of 54 minutes (min. 35 minutes, max. 70 minutes). Prior to the expert interviews, the sustainability report, the declaration of principles on human rights and the supplier code of conduct of the respective company were reviewed when available. The semi-structured interview guide comprises two parts. The first part collects the following parameters: (1) company size classification based on the scope of application of the LkSG, (2) department of the interviewee(s), (3) related product subgroups. The second part consists of eight proposition-oriented questions, which were followed-up by tailored interview-specific questions. The data was collected through audio recordings for 14 interviews, while one interview was transcribed by the authors in real time as the participant preferred not to be recorded.[6]

4.4 Data Management and Analysis

All data was transcribed using Microsoft Word and proofread and anonymised by the authors in compliance with the established transcription rules (cf. Appendix 12.2). Only the content of the second part of the interview was considered when creating the transcripts, as the first part was primarily focused on describing our sample. The data from the first part was analysed separately and in a descriptive manner. The transcripts were coded and analysed using MAXQDA software. Firstly, a deductive code system was used which was based on the interview guide. Secondly, inductive subcategories were formed based on the data and the transcripts were recoded using the revised inductive code system. When the authors disagreed on the coding, they held discussions until they reached an agreement. An agreement was preconditional for the final coding. Paraphrasing was used for particularly difficult interview passages. In total, both authors went through the data five times each.

Following coding, the individual codes were analysed on a category basis. Our coding process was intentionally designed to be flexible, allowing for multiple levels of categorization depending on the complexity of the data, following Kuckartz, Rädiker (2022). In some instances, our analysis extended up to six hierarchical levels.

For example, when all levels were utilized, the structure followed this hierarchy:

- **Top-level category**: proposition (e.g., H2_more certification)
- **Second-level category**: research question (e.g., impact of legislation on certification)
- **Higher-order category**: thematic classification of responses (e.g., increase in demand)
- **Subcategory**: further differentiation of response content (e.g., opinions, reasons)
- **Second subcategory**: analysis within the subcategory (e.g., reasons: pro; reasons: contra)
- **Third subcategory**: specific reasons (e.g., efficient solution)

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[6] All participants received a consent form prior to the interview, which they signed and returned to us before the interview took place. Ethics approval was not obtained for this study, as the participants were involved in their professional capacity as representatives of companies, rather than in a private or personal capacity. Thereby, the research question did not involve personal or sensitive information.

However, not all responses required this full depth of coding at every level. In most cases, the first, second, and sixth levels were sufficient to capture the relevant distinctions. The number of coding levels applied depended on the granularity needed for meaningful analysis.

Based on the approach by Kuckartz, Rädiker (2022), a summary was created for each expert interview for the categories that capture changes or opinions in order to increase the qualitative clarity (through better focus on the most relevant data) and quantitative clarity (by grouping statements to identify similarities and differences). For the categories that do not record changes or opinions, the individual coded interview passages were analyzed for similarities and differences in content across interviews. This process helped group the statements, illustrating their diversity and ensuring a comprehensive and structured analysis

4.5 Sample Characteristics

The study analysed fifteen expert interviews (I1 to I15) to present the initial experiences of fourteen companies and one trade association representative. The association represents companies of different sizes, most of which are not obliged by the LkSG. Out of the fourteen companies, seven were already subject to the LkSG in 2023 due to having more than 3,000 employees. Five companies were not subject to the LkSG until 2024, as they had more than 1,000 but less than 3,000 employees. The remaining two companies had just under 1,000 employees and are not subject to the LkSG. Eleven of the fourteen companies belong to the agri-food industry, while the other three are trading companies. In total, the fourteen companies generated a global turnover of approximately € 234 billion in 2021.

A summary of the other sample characteristics, product subgroup and department of experts is provided in Table 1. Cocoa and chocolate (n = 11), vegetable oils and fats (n = 10) and coffee (n = 8) were named most often as product subgroups. Most interview partners are located in the corporate sustainability department, followed by procurement and compliance. Due to the small sample size, it was not possible to identify distinctions in responses based on factors such as company size, product subgroups, or the department of the interviewees.

Table 1. Sample characteristics

Business sector			
Agri-food sector	11		
Trading companies	3		
Associations	1		
Company size classification based on the scope of the LkSG			
>3,000 employees	7		
>1,000 employees	5		
<1,000 employees	2		
Not applicable	1		
Occupational group of the interviewee(s)			
Corporate responsibility	12		
Procurement	5		
Compliance	4		
Related product subgroups (Destatis, 2023)			
	Total (n = 15)	Food industry (n = 11)	Trading companies (n = 3)
Cocoa and cocoa products	11	8	3
Vegetable oils and fats	10	7	3
Coffee	8	5	3
Nuts and dried fruits	7	4	3
Fruit and vegetable juices	7	3	3
Spices	7	5	2
Tropical fruits	5	1	3
Tea and mate	4	1	3

Source: authors' illustration

5 Results

The result section is structured according to the propositions. Additional findings from the expert interviews that support the categorisation of the legal influence on supplier selection are presented at the end of the section. An overview of categories and subcategories, along with their mentions in the interviews, is presented in the Appendix 11.3.

5.1 New Criteria and Increased Weight of Sustainability in Supplier Selection (P1)

During the interviews, the experts were asked whether their company's selection criteria for suppliers had changed regarding human rights and environmental aspects because of the introduction of the LkSG. The findings can be categorised into three subsections: changes (1) in the identification and assessment of human rights and environmental risks among suppliers, (2) in the weighting of human rights and environmental criteria in supplier selection and (3) in the level of requirements that companies review within their human rights and environmental selection criteria.

Identification and Assessment of Human Rights and Environmental Risks in the Supply Chain

Eleven companies have expanded their collection of information to assess human rights and environmental risks within their suppliers' business activities since the announcement of the LkSG in 2021. For instance, I1 reported that the LkSG has led to a significant increase in the level of detail of the data collected from suppliers on the risk of human rights or environmental violations. I6 stated that: „We have a traditional audit questionnaire in which we have tried to catalogue quality standards and practices together with our suppliers. This is now being supplemented by a significantly more detailed section focusing on sustainability." I15 acknowledged that retailers now have increased information requirements due to their obligation to carry out a risk analysis.

Seven companies updated their supplier evaluation system to include all aspects of Section 2 LkSG. I6's company reviews new aspects through supplier self-disclosures. I9's company conducts qualitative discussions with suppliers for this purpose. The company of I10 has initiated the development of a new questionnaire for suppliers. The questionnaire aims to map the entire management system for human rights and environmental due diligence.

Five companies have expanded their supplier assessment criteria beyond the scope of the LkSG. They require information regarding the influence of suppliers on their upstream supply chain. Suppliers must provide information on their participation in social projects (I1), preventive measures against human rights risks in their upstream supply chain (I7, I14), their supplier management (I7, I14) or the structure of their supply chains (I6).

In contrast to the aforementioned changes, two company representatives stated that their company had made no or only minor changes to the supplier evaluation. I8 stated that there is no need for changes in the identification process for human rights and environmental risks. The company's risk analysis already covers more than what is required by the LkSG, including the coverage of indirect suppliers.

Weighting of Human Rights and Environmental Criteria in Supplier Selection

Since the introduction of the LkSG, seven companies have increased their focus on selecting suppliers with low human rights and environmental risks. For instance, I1 mentioned that while price and quality were previously the main criteria for purchasing coffee, sustainability will now also play a key role, with risk analysis outcomes influencing supplier selection. Companies like I9, I13, and I14 have similarly given more weight to these criteria, with I1 considering withdrawal from high-risk countries due to increased customer expectations, especially from food retailers. I2 described it as follows: *„We have adjusted our procurement strategy, meaning that, in addition to quality, price, and other previously decisive criteria, sustainability criteria - particularly those related to human rights - are now equally considered in the selection process"*, despite an earlier statement that their cocoa purchasing strategy would not change. I6 and I9 also reported a significant increase in the importance of sustainability in their supplier selection, with I9 aiming to build a low-risk supplier portfolio. I13 views risk analysis as crucial for minimizing risk, allowing discussions with suppliers before contract agreements. Meanwhile, I11 noted that while social risks are considered, they remain one of many factors in the purchasing process.

For three companies, the weighting of these criteria remained unchanged, and for four others, the conclusions were unclear.

Threshold of Human Rights and Environmental Selection Criteria in Supplier Selection

All fourteen companies reported being well-prepared for the LkSG requirements, with minimal adjustments needed for their human rights and environmental criteria for direct suppliers. I3 noted that only documentation processes had changed, „[b]ut we have been dealing with this topic since 2014, whether it's child labour, forced labour, environmental impacts, and so on (..)". While I2 mentioned that their cocoa sourcing methods would remain unaffected. I1 and I13 had already required SMETA (SEDEX Members Ethical Trade Audit) audits from new suppliers before the LkSG. I10 and I14 found only minor deviations from their existing standards, with I14 already adhering to the UN's Principles on Business and Human Rights. Similarly, companies represented by I15 had already integrated human rights considerations before the LkSG. Five experts attributed high standards to their company's respective philosophy or requirements, three to social pressure, and one to food retailer demands.

However, eight companies expanded their code of conduct or increased requirements for suppliers. I2 stated that the code of conduct for business partners had been adapted but would not significantly affect supplier selection. I9 and I11 noted that their code of conduct had only been thematically expanded to include issues like security personnel and, for I9, environmental aspects from the LkSG. I9 views this as a preventive measure for LkSG compliance and has adapted the code in its German subsidiaries accordingly. Five companies broadened their supplier criteria related to the LkSG, although the specific new requirements were unclear. I11 stated that becoming a supplier has become more challenging, requiring an Ecovadis assessment and higher standards for the extended supply chain. I14 phrased it as follows: „Well, it may not have become more difficult to become [a supplier], setting aside Zero Tolerance issues, it has become more difficult to remain one. Because we have a very clear expectation that our suppliers work with us to continuously drive sustainable development along the required standards." In three cases, only minor adjustments were necessary to meet the LkSG requirements.

Eight companies now require suppliers to sign the code of conduct for business partners, with I10 explaining that this is now a legally enforceable obligation. I11 mentioned some resistance from suppliers unwilling to comply. In six companies, the level of human rights and environmental requirements has not increased recently.

5.2 Stronger Focus on Certifications (P2)

To answer the second proposition, the experts were asked questions about certifications that include human rights and environmental criteria. The findings can be categorised into the following subsections: (1) previous use of certifications that include human rights and environmental criteria, (2) changes in the portfolio of certifications used that include human rights and environmental criteria and (3) the influence of legally mandated corporate due diligence obligations on the role of certifications in supplier selection.

Previous Use of Certifications with Human Rights and Environmental Criteria

Thirteen of fourteen company representatives considered external certifications with human rights and environmental aspects when selecting suppliers, with verifications also playing a significant role. At least nine companies use certifications, and at least nine use verifications in supplier selection.

Eight experts emphasized that certifications and verifications are crucial tools for assessing supplier risks. I2, I4, I12, and I15 apply them to suppliers identified as risky according to the LkSG. Six experts highlighted the value of independent, external risk assessments, as they are more objective and less prone to criticism than internal reviews (I15). Nine experts noted that certifications help prevent human rights or environmental risks in supply chains, with I2's company aiming for certified supply chains free from violations. I4 mentioned that certifications make it easier to verify a supplier's willingness to improve. According to I9, *„It is indeed clear that the risk is mitigated when a certification is available as proof".* I4, I11, and I14 see certifications as providing basic assurance for meeting due diligence obligations. According to I11, certifications indicate whether a supplier has a solid management system in place. Seven experts said certifications reduce monitoring efforts and costs, with I6, I7, I9, and I15 noting that their companies lack the capacity to check all direct suppliers themselves, making certifications essential. Five experts highlighted customer demands as a key factor in using certifications, while two mentioned limited influence over indirect suppliers and the expertise of certifiers.

However, eleven experts noted that certifications alone are insufficient for due diligence. I5 explained that certifications can only indicate compliance, as their experience showed discrepancies between certificates and reality. I9 pointed out that certifications involve only spot checks. I10 and I11 noted that issues like ensuring a *„living income"* require more than certification. I6 and I14 criticized some certifications for not adapting to regional issues, with I14 warning that companies often mistakenly believe certification alone meets due diligence obligations. I2 argued that traceability is already a standard in the agri-food sector, providing transparency even without certification.

Portfolio Changes for Certifications with Human Rights and Environmental Criteria

Ten experts reported no changes to their certification portfolios. I10 noted that their external audit protocols were adapted by the certification bodies to meet LkSG requirements, making changes unnecessary. I13 mentioned that verifications like SEDEX and Ecovadis have also been updated to align with the LkSG. However, three companies indicated potential future changes. I1 suggested that certifiers might adapt and reposition themselves due to the LkSG, which could lead to portfolio changes. I3's company, while not currently considering certifications for supplier selection, expressed willingness to do so if certifiers increase transparency and meet specific requirements. I8 reported a review of their accepted certifications for alignment with LkSG due diligence obligations but deemed an expansion of standards unlikely.

Four companies noted that the LkSG had affected how certifications are considered in supplier selection. I4 mentioned expanding their portfolio of recognized standards for high-risk suppliers to minimize risk, having used SEDEX for two years. I9's company no longer views certificates as full exemptions from human rights and environmental risks; they now conduct internal comparisons with LkSG standards, recognizing certifications only if they sufficiently cover the protected interests. I11's company removed some certifications from their accepted portfolio: *„[...], we have already rejected some certifications that we previously accepted. We decided that they do not meet the requirements of the Supply Chain Act, for instance, due to a lack of a proper grievance mechanism".* They now require high-risk suppliers to undergo an Ecovadis assessment. I13 reported adding new certifications like Ecovadis to their accepted standards, now requested during supplier selection.

Perceived Impact of Corporate Due Diligence Laws on the Role of Certifications

Twelve experts predicted that legal requirements for corporate due diligence would increase the demand for certification and verification, regardless of internal company changes. Four experts emphasized that certifications are a go-to solution, especially for smaller companies under the LkSG, as they offer basic assurance for critical product-origin combinations. I15 suggested companies might use multiple certifications for protection critical product-origin combinations. I2 expects more reliance on certifications to verify preventive and corrective measures, while I10 stated that the sector sees no alternative to certifications, despite BAFA's statement that they are not the ultimate solution.

Two experts, I2 and I7, did not offer a clear opinion on future certification demand. I2 argued that binding due diligence regulations may reduce demand, as companies will need to handle tasks previously outsourced to certifiers. Companies should, therefore, reassess the necessity of certifications.

Five experts noted that due diligence obligations are pushing certification bodies to adapt their standards to meet legal requirements, leading to expanded and harmonized certifications. I10 highlighted the expanded focus of some certifications, while I6 and I13 reported that Ecovadis and SEDEX have updated their questionnaires to align with the LkSG. I13 stressed the importance of ongoing development for these providers to maintain their *„license to operate".*

Several experts emphasized the growing expectations for transparency and credibility in certification selection. I4 believed only certifications that fully meet LkSG criteria and present transparent results will succeed in the medium term. I11, I12, and I15 agreed that audit quality must improve under new regulations, with I11 noting weaknesses in some rapidly developed certifications. *„And the question is always: do I really see everything in the audit, or only a part of it? Isn't it just a snapshot? That always needs to be assessed and evaluated accordingly."* (I12, translated)

I15 added that certifications have faced media criticism since the LkSG's introduction, and improving audits is essential to restoring public trust. I11, I12, and I15 also stressed the need for better auditor training.

Four experts supported standardizing standards within the agri-food sector. Two experts predicted a reduction in the number of certifications. I4 concluded that one or two certifications will dominate, certifying all raw materials imported into Europe. I8 and I15 highlighted inefficiencies when companies within the same sector require different certifications for the same convention or norm.

5.3 Reduction of the Supplier Base (P3)

The results can be categorised into two subsections: (1) the perceived usefulness of reducing the size of the supplier base in response to the LkSG and (2) whether the companies have already made, or are planning to make, changes to the size of the supplier base in response to the LkSG.

Perceived Usefulness of a Reduction in the Supplier Base due to the LkSG

Eight experts believed downsizing the supplier base in response to the LkSG is neither necessary nor beneficial. All but one provided arguments against it. Ten experts were concerned that reducing suppliers would threaten supply assurance. Five highlighted that agricultural commodities are unique, with some only grown in specific regions, making reliance on low-risk countries impractical (I2). I2 also noted that switching suppliers can be difficult due to market dominance by a few large suppliers. Five experts emphasized diversifying the supply chain to mitigate weather-related risks (I1, I2, I5, I6, I15), with I1 calling supplier diversity a key competitive advantage. As I1 explained, „Well, because you also want a certain diversity and specific taste in the product. And the customers also demand quite a bit from us, which is a big challenge". I12 and I13 said reducing the supplier base would jeopardize production security. I13 added that the current supplier base size ensures alternatives in case of failure, while I14 questioned whether remaining suppliers could provide the needed flexibility and diversity.

Four experts argued that reducing the supplier base is only feasible if the product range is reduced, with I3 and I11 noting that supplier base size reflects the product range rather than suppliers per product. Three experts cited high qualification costs for new suppliers in the agri-food sector. I11 explained that quality audits for new suppliers can take up to two years, and suppliers are only delisted for specific reasons. I5 likened the supplier base to a large machine that needs restarting whenever a supplier changes. Six experts, including I2, said LkSG-related risks don't justify reducing the supplier base. I2 emphasized that risks are in the upstream supply chain, not with direct suppliers, and reducing the supplier base wouldn't change these risks. I8 added that the cost per additional supplier is minimal.

Five experts said LkSG implementation should not generally lead to a reduced supplier base but could in specific cases. I4 suggested it depends on the sourcing strategy, especially for companies with multiple suppliers per product to secure better pricing. I4 also saw potential in reducing service providers in areas like logistics. I6 acknowledged that a smaller supplier base might aid LkSG compliance but doubted the current supplier base has enough flexibility. I7 recommended a reduction in supplier numbers to foster stronger partnerships, regardless of LkSG.

I14 was the only expert who fully supported reducing the supplier base due to LkSG, arguing that long-term relationships with fewer suppliers would offset compliance costs and future regulations. I15 agreed that working with larger suppliers might be beneficial, especially when buying from producer organizations with many small-scale farmers, where some are likely to violate the protected interests of the LkSG.

Changes in the Size of the Supplier Base due to the LkSG

When asked about measures already implemented or planned, the experts provided a clear consensus: none of the fourteen companies had downsized or planned to reduce their supplier base due to the LkSG. As I1 put it, *„Well, we do not actively want to push suppliers out of our supplier pool. That is not the purpose of this law".* However, five companies left open the possibility of future reductions. I9 mentioned that they are currently focusing on the issue and cannot rule out minor adjustments in the future. I4, I6, and I14 indicated that decisions regarding the supplier base would be made after completing the concrete risk assessment.

I6 estimated it would take 8 to 10 months to determine whether their dual sourcing policy could be maintained while reducing suppliers. I14 predicted that the risk assessment might lead to parting with some suppliers and restructuring the portfolio.

5.4 Other Results

Further results supporting the identification of the LkSG's influence on supplier selection were obtained from the qualitative interviews. The results are grouped into the following subsections: (1) the impact of documentation and reporting requirements, and (2) the impact of the LkSG on internal and external collaboration.

Consequences of the Documentation and Reporting Effort

Eight experts reported that the implementation of the LkSG primarily led to changes in documentation and reporting. Six of these experts also noted that these areas require the most effort to comply with the act. I2 remarked that the effort required to implement the act is disproportionate to its achievements. I7 explained that, in a legal review, documented efforts are more important than actual efforts. I11 emphasized the significant time spent documenting processes and preparing reports, while I15 observed that many companies are not accustomed to the intensive documentation required by the LkSG.

I6 highlighted the high level of effort needed to meet the information demands of their customers, who are also subject to the LkSG, and noted that these requirements can be overwhelming for smaller companies not covered by the act, potentially jeopardizing their ability to deliver. I6, I14, and I15 expressed concerns that expanding information requirements could make the German market less attractive to foreign suppliers. I14 mentioned that some suppliers refuse to comply with new regulations and seek customers in less regulated markets. I15 added that while foreign suppliers may threaten to end relationships due to growing requirements, such threats are often empty, as suppliers depend on additional sales during good years.

A common issue with LkSG implementation is that it diverts resources from other initiatives. Six experts criticized the act for shifting focus from human rights risks in high-risk countries to low-risk direct suppliers, most of whom are based in the EU. In this context I13 phrased it as follows: *„Then came the LkSG, which said, 'No, you're not looking further down the supply chain, you only focus on your direct business partners.' As a result, we were forced to allocate our resources differently."* I2, I9, I10, and I14 argued that the risk of violations by direct suppliers is low, as most operate within the EU. Seven companies confirmed this, while only three had more direct suppliers outside the EU.

I9 noted that direct suppliers are not responsible for risks in the upstream supply chain. I6 added that, without the LkSG, attention would have stayed on human right issues further upstream the supply chain, but now resources are spent scrutinizing all suppliers, regardless of size. They noted it takes longer to explain new requirements to a small German trader than to collaborate on improvements with a farmer in the Global South.

Similarly, I13 reported that LkSG implementation is consuming resources that were previously used for advancing sustainable procurement. The company had been working with a research institute on upstream supply chain initiatives but discontinued the collaboration due to the demands of the LkSG. In contrast, I4 does not see the LkSG as a burden, stating that it highlights areas that had not been fully analysed before.

Impact of the LkSG on Internal and External Company Relationships

Eight experts noted that the LkSG has significantly increased awareness of human rights and environmental risks. Six experts observed that the sustainability department now wields greater influence within their companies. I5 described this development, stating, „I believe, scientifically speaking, it would be correct to say: There is a correlation between the openness of collaboration with the colleagues in procurement and us since the formalization of the LkSG". I9, I11, and I13 mentioned that the LkSG helps sustainability departments implement pre-existing plans. Seven experts highlighted that human rights and environmental risks are now more prominent in supplier negotiations and cooperation.

Most experts view LkSG requirements as a supplier development challenge rather than a selection one. Ten experts expressed a willingness to work more closely with suppliers to help them meet compliance requirements. I9 stressed that engagement should be prioritized over severing ties, and I14 agreed that separation should be a last resort. I2 advocated for improving existing supplier relationships as a more sustainable approach to mitigating risks. I1 added that long-term relationships with both direct and indirect suppliers are crucial competitive factors for the company.

6 Discussion

The introduction of the LkSG has created a notable shift in supplier selection practices within the agri-food sector in Germany, but its effects have varied across companies. Our findings show that, prior to the introduction of the LkSG, most companies had already integrated human rights and environmental criteria into their supplier selection processes. However, after the law's formalization, all companies included LkSG-protected interests in their supplier selection criteria, with one company expanding its criteria beyond the law's scope. This expansion of criteria supports findings from empirical research that suggest regulations like the LkSG lead to greater formalization of sustainability practices, aligning with prior studies such as DUPONT et al. (2024), who noted that mandatory due diligence regulations often prompt companies to enhance their compliance measures.

Interestingly, this development contrasts with a survey of 2,000 companies suggesting that nearly half of large German companies were not yet fully addressing sustainability in their supply chains by the end of 2023 (Müller et al., 2024). However, in line with other studies, we observed that the LkSG has prompted companies to make their supplier codes of conduct mandatory, with more than half of the companies previously not requiring such codes now adopting them. This finding supports the trend observed in research by Beile, Vitols (2024) on 40 companies listed on the DAX, where nearly 90% had a code of conduct covering human rights and environmental issues by 2022. This legal push for codes of conduct appears to reflect broader sectoral shifts in which industries facing greater public scrutiny show higher levels of compliance with regulatory frameworks (Dupont et al., 2024). In the case of the LkSG, this manifests as the standardization of sustainability criteria within supplier selection processes, particularly concerning human rights and environmental risks.

Despite the integration of these new criteria, the operational consequences have been relatively limited. Only one company in our sample considered withdrawing from high-risk countries, which goes against the expectation of broader exits from these regions, as predicted by Felbermayr et al. (2022) and BDI (2024). The reason for this discrepancy may lie in the agri-food sector's reliance on region-specific commodities, which limits the choice of suppliers and the ability to disengage from high-risk areas without significant supply chain disruptions. Additionally, concerns around maintaining supply chain resilience have deterred companies from downsizing their supplier base. This finding also connects with the broader discussions around unintended consequences of due diligence regulations, such as the „cut-and-run“ strategy observed in other sectors like apparel (Kolev-Schaefer, Neligan, 2024) and the Dodd-Frank Act in the US, where efforts to regulate mineral sourcing led to unintended negative outcomes, such as disengaging from high-risk suppliers and exacerbating social issues in the countries of origin (Stoop et al., 2018; Bloem, 2023). While concerns about disengagement are present in the context of the LkSG, our study did not find evidence of such behaviour in the short term.

Further, while the LkSG has not resulted in substantial changes to certification portfolios, the regulation is expected to lead to an increase in certification demand, particularly among smaller companies that are not directly subject to the law. This aligns with the broader literature on certification use, which shows that certifications in the agri-food sector are primarily driven by risk assessment and prevention needs (Marx, Depoorter, 2023). Our findings reflect that most companies still rely on certifications for these purposes, but experts agree that certifications alone cannot fully address due diligence obligations, in line with guidance from the competent authority (BAFA, 2022a). This mirror concerns raised in the literature regarding the quality of certification processes and the growing need for transparency, audit quality, and credibility in certification bodies (Albersmeier et al., 2010; Meemken et al., 2021).

The limited uptake of new certifications in response to the LkSG may also be attributed to the already widespread use of certifications in the agri-food sector, which is relatively advanced in comparison to other industries (Marx, Depoorter, 2023). However, as the scope of the LkSG expands to include indirect suppliers due to the upcoming EU-wide due diligence regulation, companies are expected to increase their reliance on certifications. This is consistent with the predictions from Felbermayr et al. (2023) and Wieck et al. (2023), who anticipate that companies will need to adapt to a larger and more complex supply chain network.

When considering the supplier base, experts agreed that the additional costs associated with the LkSG would not lead to significant reductions in the number of suppliers. This is contrary to expectations from earlier studies that suggested companies might reduce their supplier bases to cut costs (Felbermayr et al., 2022; BDI, 2024). While five experts suggested supplier reduction could be considered as a cost-saving strategy, they emphasized that this would only occur in conjunction with other factors. Moreover, none of the companies in our sample had reduced or planned to reduce their supplier base due to the LkSG. This is a noteworthy finding, as it challenges assumptions from earlier research predicting supplier base downsizing as a result of regulatory changes (Felbermayr et al., 2022). Instead, the key concern for companies remains maintaining supply chain resilience, which limits the feasibility of such reductions.

The lack of supplier reductions may also be attributed to specific procurement strategies for commodities like coffee and cocoa, where companies tend to establish long-term, intensive partnerships with direct suppliers (Feyaerts et al., 2019). In contrast, companies that rely on a larger number of suppliers for a single product may be more likely to consider reductions, particularly if they are under cost pressures (Felbermayr et al., 2022). However, the predictions of supplier base downsizing presented in earlier studies, such as those by Felbermayr et al. (2022) and BDI (2024), should be taken with a pinch of salt, as these studies were commissioned by industry associations that may have certain interests in downplaying the potential benefits of due diligence regulations in achieving their intended objectives. These industry-driven studies may, therefore, reflect a more pessimistic view of the regulatory landscape, overstating the potential operational disruptions caused by the LkSG. Despite the absence of a widespread „cut-and-run“ approach, our study suggests that companies reliant on many suppliers, such as major importers of agricultural commodities, may experience more significant effects in the medium term, especially as the LkSG's scope expands (Helmold, Terry, 2016).

The microeconomic impact of the LkSG is significant for understanding the reconfiguration of global supply chains in response to new regulatory requirements. This aligns with broader discussions around how companies adapt to mandatory due diligence regulations and the restructuring of global supply chains (Wilhelm, 2024). As the LkSG serves as a blueprint for the forthcoming EU-wide due diligence directive, the lessons learned from Germany’s experience will provide crucial insights for companies across member states. These insights are particularly relevant for understanding how companies in the agri-food sector will adapt to similar regulatory requirements in the future, especially when these laws involve indirect suppliers and broader supply chain risks.

7 Limitations and Future Research

Due to the recent introduction of the LkSG and the consequential lack of data, a qualitative approach was used to generate indications of possible effects on supplier selection. A couple of limitations of our approach need to be considered when interpreting the results.

Our sample consists of fifteen expert interviews. The experts opted to take part in the study knowing the topic and the questionnaire. A self-selection bias is, therefore, likely. Companies that already prioritise human rights issues in their supply chains and perceive their efforts as an adequate preparation for the due diligence regulations are more likely to participate in expert interviews. Interview invitations were probably partly declined because the companies did not feel ready to answer the questionnaire. Our findings, therefore, represent effects of increased corporate due diligence regulations on supplier selection of companies that are better prepared than the average. This might explain, why our results are more positive in terms of the intended effects of the LkSG than other quantitative surveys (cf. Discussion).

The combined influence of social desirability bias and interviewer effects may have further amplified this tendency (Grimm, 2010; West, Blom, 2016). Given the socially desirable objectives of due diligence regulations, respondents may have portrayed their company’s practices in a more favourable light. Although they were aware that all data was stored and analysed anonymously, they might have felt compelled to respond in a socially desirable manner during face-to-face interviews, possibly influenced by their perception that interviewers expected such answers. To mitigate these biases, we carefully phrased the questions in a neutral manner, avoiding any wording that might imply expectations. Additionally, due diligence regulations have been widely discussed from various perspectives in the media, which we hope contributed to respondents feeling comfortable providing honest answers.

Due to the sample size, we also do not attempt to analyse differences among the participating companies, in terms of size, position in the value chain, main commodities etc. Overall, our results best reflect the effects on companies’ supplier selection in the agri-food sector relying on suppliers in the cocoa and coffee sector, as well as on suppliers of vegetable oils and fats. We acknowledge that the exclusion of animal-sourced food in our sample represents a limitation. Additionally, we conducted our interviews when the LkSG had just come into effect. Companies might adjust their supplier selection in the medium-term. Our results offer a snapshot into the first reactions and preparations of companies in light of the introduction of the LkSG. Our sample size was also not sufficient to generate meaningful statistical reliability measures, such as Cohen’s κ or Krippendorff’s α (e.g., Feng et al., 2014). Moreover, beyond the limited sample size, our coding process was interpretative and iterative, relying on discussions among responsible authors (cf. Section 4.4.). Since intercoder reliability measures require independent parallel coding, they did not accurately reflect our collaborative coding approach.

Our study also draws on various sources, so-called grey literature, including studies from foundations, business associations, and private research institutes. While these sources provide valuable insights, it is important to acknowledge their potential limitations. As they may have specific self-interests, their findings could be influenced by these perspectives. Additionally, these studies usually do not undergo peer review.

The study's results and limitations offer potential avenues for future analysis. For instance, it would be interesting to re-evaluate and quantify the impact of the LkSG at a later stage, once the companies' adjustment processes have been mostly finalised. Based on the insights of our qualitative approach, a quantitative survey could be designed and distributed widely to capture a more diverse sample and generate a larger sample size. Additionally, future research could focus more on our results on certifications and verifications in supplier selection and beyond.

8 Conclusion

Our study provides a first contribution to the debate on the implementation and impact of legally binding due diligence obligations. During the expert interviews, the companies conveyed confidence in their ability to use their current supply chains in the future without the need to systematically reduce their supplier base. The legal requirements of the LkSG were viewed by the companies as a task for supplier development rather than supplier selection. The requirements on human rights and environmental criteria for supplier selection, for example, have hardly been raised. However, adjustments were made in terms of the demand for information and documentation. In future, suppliers to the German agri-food sector will be required to provide considerably more information on human rights and environmental risks. If product-country combinations pose a risk to any of the protected interests outlined in Section 2 LkSG, suppliers must be willing to collaborate with their German customers to mitigate the risks. The use of certification and verification has also changed, as companies have become more selective when choosing a service provider. Companies are paying more attention to whether protected interests are adequately covered. The importance of certifications and verifications remains high for almost all companies interviewed. Companies are increasingly concerned with ensuring adequate protection of protected interests. For suppliers, this serves as an incentive to review their use of certifications and verifications in terms of their compliance with the LkSG and to adjust their own portfolios.

Data Availability Statement

The data of the first parts of the interviews is not accessible as it may lead to the identification of the interviewees.

The data of the second parts of the interviews (anonymised transcripts, see 4.4) is not openly accessible but access may be granted after contacting one of the responsible authors.

Competing Interests

The authors declare no competing interests.

References

4C Services GmbH (2020): 4C Code of Conduct. Version 4.0. https://www.4c-services.org/process/document-library/, accessed: 03.2024.

Akamp, M., Müller, M. (2013): Supplier management in developing countries. Journal of Cleaner Production 56: 54-62. https://doi.org/10.1016/j.jclepro.2011.11.069.

Albersmeier, F., Schulze, H., Spiller, A. (2010): System Dynamics in Food Quality Certifications: Development of an Audit Integrity System. International Journal on Food System Dynamics 1 (1). https://doi.org/10.18461/IJFSD.V1I1.118.

Babich, V., Aydın, G., Brunet, P.-Y., Keppo, J., Saigal, R. (2011): Risk, Financing and the Optimal Number of Suppliers. In: Gurnani, H., Mehrotra, A., Ray, S. (Eds.): Supply Chain Disruptions. Springer, Dordrecht: 195-240. https://doi.org/10.1007/978-0-85729-778-5_8.

BAFA (Federal Office for Economic Affairs and Export Control) (2022a): Appropriateness. Handout on the principle of appropriateness according to the requirements of the Act on Corporate Due Diligence Obligations for the Prevention of Human Rights Violations. Eschborn.

BAFA (2022b): Identifying, weighting and prioritizing risks. Guidance on conducting a risk analysis as required by the German Supply Chain Due Diligence Act 'Lieferkettensorgfaltspflichtengesetz' or 'LkSG'. Eschborn.

BDI (Federation of German Industries) (2024): Unternehmensumfrage. Auswirkung des Lieferkettensorgfaltspflichtengesetzes (LkSG) auf Unternehmen. [Company survey. Impact of the Supply Chain Due Diligence Act (LkSG) on companies.] Berlin. https://bdi.eu/artikel/news/umfrage-auswirkungen-des-lieferkettensorgfaltspflichtengesetz, accessed: 02.2024.

Beile, J., Vitols, K. (2024): Das Lieferkettensorgfaltspflichtengesetz. Einfluss und Auswirkungen von Mitbestimmung auf Due Diligence in der Lieferkette. [The Supply Chain Due Diligence Act. Influence and impact of Co-determination on due diligence in the supply chain.] Working Paper Forschungsförderung No. 320. Hans-Böckler-Stiftung, Düsseldorf. https://www.boeckler.de/de/faust-detail.htm?sync_id=HBS-008799, accessed: 03.2025.

Blackman, A., Rivera, J.E. (2010): The Evidence Base for Environmental and Socioeconomic Impacts of 'Sustainable' Certification. SSRN Electronic Journal (dp-10-10-efd). https://doi.org/10.2139/ssrn.1579083.

Bloem, J.R. (2023): Good Intentions Gone Bad? The Dodd-Frank Act and Conflict in Africa's Great Lakes Region. Economic Development and Cultural Change 71 (2): 621-666. https://doi.org/10.1086/715618.

Brandenburg, M., Warasthe, R., Seuring, S. (2023): Impact pathways: improving supply chain sustainability by due diligence acts? Insights from a German case. International Journal of Operations & Production Management 44 (4). https://doi.org/10.1108/IJOPM-03-2023-0200.

Burke, G.J., Carrillo, J.E., Vakharia, A.J. (2007): Single versus multiple supplier sourcing strategies. European Journal of Operational Research 182 (1): 95-112. https://doi.org/10.1016/j.ejor.2006.07.007.

Clean Clothes Campaign (2019): Sozialaudits. Wie sie Unternehmen schützen und Arbeiter*Innen im Stich lassen. [Social audits. How they protect companies and let workers down. Filling the Gap: Achieving Living Wages through Improved Transparency.] https://saubere-kleidung.de/wp-content/uploads/2019/11/Factsheet_Sozialaudits_November-2019_CCC-DE.pdf, accessed: 03.2024.

Delmas, M., Montiel, I. (2009): Greening the Supply Chain: When Is Customer Pressure Effective? Journal of Economics & Management Strategy 18 (1): 171-201. https://doi.org/10.1111/j.1530-9134.2009.00211.x.

Destatis (Federal Statistical Office) (2023): Gliederung nach Warengruppen und Warenuntergruppen der Ernährungswirtschaft und der gewerblichen Wirtschaft (EGW 2002). [Classification by product groups and product subgroups of the food industry and the commercial economy.] https://www.destatis.de/DE/Methoden/Klassifikationen/Aussenhandel/gliederung-warengruppen-egw.html, accessed: 10.2023.

Dhankhar, N., Kumar, J. (2023): Impact of increasing pesticides and fertilizers on human health: A review. Materials Today: Proceedings. https://doi.org/10.1016/j.matpr.2023.03.766.

Dietz, T., Biber-Freudenberger, L., Deal, L., Börner, J. (2022): Is private sustainability governance a myth? Evaluating major sustainability certifications in primary production: A mixed methods meta-study. Ecological Economics 201: 107546. https://doi.org/https://doi.org/10.1016/j.ecolecon.2022.107546.

Dreiseitl, H., Richter, N. (2020): Monitoring des Umsetzungsstandes der im Nationalen Aktionsplan Wirtschaft und Menschenrechte 2016-2020 beschriebenen menschenrechtlichen Sorgfaltspflicht von Unternehmen. Abschlussbericht. [Monitoring the implementation status of corporate human rights due diligence as described in the National Action Plan for Business and Human Rights 2016-2020.] Closing report. Auswärtiges Amt, Berlin.

Dutta, P., Jaikumar, B., Arora, M.S. (2022): Applications of data envelopment analysis in supplier selection between 2000 and 2020: a literature review. Annals of Operations Research 315 (2): 1399-1454. https://doi.org/10.1007/s10479-021-03931-6.

Dupont, V., Pietrzak, D., Verbrugge, B. (2024): A step in the right direction, or more of the same? A systematic review of the impact of human rights due diligence legislation. Human Rights Review 25 (2): 131-154. https://doi.org/10.1007/s12142-024-00724-9.

Erdmann, J.G. (2022): The german supply chain due diligence act: first insights from experts and policy implications. Publisher: Universidade Católica Portuguesa, Lissabon.

Ethical Trade Initiative (2017): ETI code violation procedure. https://www.ethicaltrade.org/resources/eti-alleged-code-violation-procedure, accessed: 09.2023.

Ethical Trade Initiative (2018): The ETI Base Code. https://www.ethicaltrade.org/eti-base-code.

Fair for Life (2018): Policy on prohibited chemicals. http://www.fairforlife.org/, accessed: 09.2023.

Fair for Life (2022): Certification standard for Fair Trade and responsible supply-chains. http://www.fairforlife.org/, accessed: 09.2023.

Fairtrade International (2015): Fairtrade Trader Standard (01.03.2015 v1.7). https://www.fairtrade.net/standard/trader, accessed: 07.2023.

Fairtrade International (2023): Unternehmerische Sorgfaltspflicht (HREDD). Wie ihr Unternehmen mit Fairtrade bestimmte Aspekte dieser Sorgfaltspflichten erfüllen kann. [Corporate Due Diligence (HREDD). How your company can fulfil certain aspects of these due diligence obligations with Fairtrade.] https://www.fairtrade-deutschland.de/fuer-unternehmen/unternehmerische-sorgfaltspflicht-hredd, accessed: 09.2023.

Felbermayr, G., Herrmann, C., Langhammer, R.J., Sandkamp, A.-N., Trapp, P. (2022): Ökonomische Bewertung eines Lieferkettengesetzes. [Economic evaluation of a supply chain law.] Kieler Beiträge zur Wirtschaftspolitik No. 42. Kiel Institut für Weltwirtschaft - Leibniz-Zentrum zur Erforschung globaler ökonomischer Herausforderungen, Kiel. https://www.econstor.eu/handle/10419/262223.

Felbermayr, G., Friesenbichler, K., Klimek, P. (2023): Vorschläge für eine effiziente und effektive europäische Lieferkettensorgfaltspflicht. ASCII Policy Brief. [Proposals for efficient and effective European supply chain due diligence. ASCII Policy Letter.] Supply Chain Intelligence Institute Austria (ASCII), Vienna.

Feng, G.C. (2014): Intercoder reliability indices: disuse, misuse, and abuse. Quality & quantity 48 (3): 1803-1815. https://doi.org/10.1007/s11135-013-9956-8.

Feyaerts, H., van den Broeck, G., Maertens, M. (2020): Global and local food value chains in Africa: A review. Agricultural Economics 51 (1): 143-157. https://doi.org/10.1111/agec.12546.

Fröhlich, E. (Ed.) (2015): CSR und Beschaffung. Theoretische wie praktische Implikationen eines nachhaltigen Beschaffungsprozessmodells. [CSR and procurement. Theoretical and practical implications of a sustainable procurement process model.] Management-Reihe Corporate Social Responsibility. Springer Gabler, Berlin.

Gamba, L., Beuchelt, T., Schneider, R. (2020): Food Security Standard. Principles, Criteria and Indicators. https://foodsecuritystandard.org/publications/, accessed: 09.2023.

German Federal Parliament (2021a): Drucksache 19/28649. Entwurf eines Gesetzes über die unternehmerischen Sorgfaltspflichten in Lieferketten. [Draft law on corporate due diligence obligations in supply chains.] https://dserver.bundestag.de/btd/19/286/1928649.pdf, accessed: 02.2024.

German Federal Parliament (2021b): Gesetz über die unternehmerischen Sorgfaltspflichten zur Vermeidung von Menschenrechtsverletzungen in Lieferketten. Lieferkettensorgfaltspflichtengesetz - LkSG. [Act on Corporate Due Diligence Obligations for the Prevention of Human Rights Violations in Supply Chains.] Bundesministerium der Justiz (Ed.): Bundesgesetzblatt (BGBl.). Verkündungsblatt der Bundesrepublik Deutschland. Online-Archiv der von 1949 bis 2022 erschienenen Ausgaben. Bundesanzeiger Verlag, Cologne. Bundesgesetzblatt 2021 Teil I, No. 46.

Global Coffee Platform (2021): The Coffee Sustainability Reference Code. https://www.globalcoffeeplatform.org/our-work/coffee-sustainability-reference-code/, accessed: 09.2023.

Grimm, P. (2010): Social Desirability Bias. Sheth, J., Malhotra, N. (Eds.): Wiley International Encyclopedia of Marketing. Wiley, Hoboken, New Jersey. https://doi.org/10.1002/9781444316568.wiem02057.

Hahn, C.K., Kim, K.H., Kim, J.S. (1986): Costs of Competition: Implications for Purchasing Strategy. In: Journal of Purchasing and Materials Management 22 (3): 2-7. https://doi.org/10.1111/j.1745-493X.1986.tb00161.x.

Hahn, D. (2002): Handbuch Industrielles Beschaffungsmanagement. Internationale Konzepte -- Innovative Instrumente -- Aktuelle Praxisbeispiele. [Handbook of Industrial Procurement Management. International concepts -- Innovative instruments -- Current practical examples.] Springer Gabler. Springer Fachmedien, Wiesbaden GmbH, Wiesbaden.

Hailiang, Z., Khokhar, M., Islam, T., Sharma, A. (2023): A model for green-resilient supplier selection: fuzzy best-worst multi-criteria decision-making method and its applications. Environmental Science and Pollution Research 30 (18): 54035-54058. https://doi.org/10.1007/s11356-023-25749-4.

Handfield, R., Walton, S.V., Sroufe, R., Melnyk, S.A. (2002): Applying environmental criteria to supplier assessment: A study in the application of the Analytical Hierarchy Process. European Journal of Operational Research 141 (1): 70-87. https://doi.org/10.1016/S0377-2217(01)00261-2.

Haupt, S., Lichter, J., May, C. (2021): Sorgfaltspflichten entlang globaler Lieferketten. Eine ökonomische Analyse. [Due diligence obligations along global supply chains. An economic analysis.] Handelsblatt Research Institute, Düsseldorf.

Helmold, M. (2023): Innovative Supplier Management. Value Creation in Global Supply Chains. Springer Fachmedien Wiesbaden; Imprint Springer, Wiesbaden. https://doi.org/10.1007/978-3-658-39245-1.

Helmold, M., Terry, B. (2016): Lieferantenmanagement 2030. Wertschöpfung und Sicherung der Wettbewerbsfähigkeit in digitalen und globalen Märkten. [Supplier Management 2030. Creating value and securing competitiveness in digital and global markets.] Springer Gabler, Wiesbaden.

Iirajpour, A., Hajimirza, M., Alavi, M.G., Kazemi, S. (2012): Identification and Evaluation of the Most Effective Factors in Green Supplier Selection Using DEMATEL Method. Journal of Basic and Applied Scientific Research 2 (5): 4485-4493.

ILO (International Labour Office) and UNICEF (United Nations Children's Fund) (2021): Child Labour. Global estimates 2020, Trends and the road forward. New York.

ILO (2015): Agriculture: a hazardous work. https://www.ilo.org/resource/agriculture-hazardous-work-0, accessed: 07.2024.

ILO, Walk Free Foundation and IOM (International Organization for Migration) (2022): Global estimates of modern slavery. Forced labour and forced marriage. ILO Publications, Geneva.

ITC (International Trade Centre) (2024): Trade Map. https://www.trademap.org/Index.aspx.

Karipidis, P., Tselempis, D., Tsironis, L.K. (2020): Eco-Certification and Transparency in Global Food Supply Chains. In: Supply chain and logistics management. Concepts, methodologies, tools, and applications. IGI Global, Hershey, Pennsylvania: 1053-1074. https://doi.org/10.4018/978-1-7998-0945-6.ch049.

KiK Textilien und Non-Food GmbH (2020): Nachhaltigkeitsbericht 2021. [Sustainability report 2021.] In: Zahn, P., Lohmann, A. (2021): Nachhaltigkeitsbericht 2021. https://unternehmen.kik.de/verantwortung/nachhaltigkeit, accessed: 09.2023.

Kiura, M.C., Langat, C. (2023): Impact of Fairtrade on flower workers and market access by flower farms in East Africa. Social Policy and Development Consulting Limited. https://files.fairtrade.net/publications/Fairtrade-flower-impact-study-Feb-2023.pdf.

Klinger, R., Krajewski, M., Krebs, D. and Hartmann, C. (2016): Verankerung menschenrechtlicher Sorgfaltspflichten von Unternehmen im deutschen Recht. Gutachten. [Anchoring human rights due diligence obligations of companies in German law. Report.] Amnesty International, Brot für die Welt - Evangelisches Werk für Diakonie und Entwicklung e. V. and Germanwatch e.V., Oxfam Deutschland e.V.

Kolev, G.V., Neligan, A. (2022): Effects of a supply chain regulation: Survey-based results on the expected effects of the German Supply Chains Act. IW-Report No. 8/2022. Institut der deutschen Wirtschaft, Cologne. https://www.econstor.eu/handle/10419/251050.

Kolev-Schaefer, G., Neligan, A. (2024): Due diligence - Effect of supply chain regulation: Data-based results on the effects of the German Supply Chain Act. IW-Report 8/2024. Institut der deutschen Wirtschaft (IW), Cologne. http://hdl.handle.net/10419/282995, accessed: 02.2024.

Konrads, S., Walter, S. (2022): Das neue Lieferkettensorgfaltspflichtengesetz - Herausforderungen, Chancen und Ausblick. [The new Supply Chain Due Diligence Act - challenges, opportunities and outlook.] Zeitschrift für Außen- und Sicherheitspolitik 15 (4): 373-385, https://doi.org/10.1007/s12399-022-00925-5. Frankfurt/M.

Kretzschmar, U., Schleiffer, M., Curran, M., Dierauer, H., Frehner, A., Leiber, F., Oehen, B., Speiser, B., Mäder, R. and Cezanne, M.-L. (2021): Nachhaltigkeit und Qualität biologischer Lebensmittel. [Sustainability and quality of organic food.] Dossier No. 1405. Forschungsinstitut für biologischen Landbau, Frankfurt/M., accessed: 02/2021.

Kuckartz, U., Rädiker, S. (2022): Qualitative Inhaltsanalyse. Methoden, Praxis, Computerunterstützung. [Qualitative Content Analysis. Methods, Practice, Software.] Beltz Juventa, Weinheim, Basel.

Large, R. (2009): Strategisches Beschaffungsmanagement. Eine praxisorientierte Einführung; mit Fallstudien. [Strategic Procurement Management. A practice-orientated introduction; with case studies.] Lehrbuch. Gabler, Wiesbaden. https://doi.org/10.1007/978-3-8349-8264-3.

Lee, A.H., Kang, H.-Y., Hsu, C.-F., Hung, H.-C. (2009): A green supplier selection model for high-tech industry. Expert Systems with Applications 36 (4): 7917-7927. https://doi.org/10.1016/j.eswa.2008.11.052.

Li, D., Wang, X., Chan, H. K., Manzini, R. (2014): Sustainable food supply chain management. International Journal of Production Economics 152: 1-8. https://doi.org/10.1016/j.ijpe.2014.04.003.

Lother, H., Schaefer, P., Schmidt, L., Rödger, J.-M. (2022): Preparing for the new Supply Chain Law - An introductory paper discussing the Opportunities and Boundaries of a digitalized Supply Chain. E3S Web of Conferences 349: 9001. https://doi.org/10.1051/e3sconf/202234909001.

Marx, A., Depoorter, C. (2023): Voluntary Sustainability Standards in International Trade. United Nations Conference on Trade and Development, New York. https://www.un-ilibrary.org/content/books/9789210022750.

Meemken, E.-M., Barrett, C. B., Michelson, H. C., Qaim, M., Reardon, T., Sellare, J. (2021): Sustainability standards in global agrifood supply chains. Nature food 2 (10): 758-765. https://doi.org/10.1038/s43016-021-00360-3.

Meemken, E.-M., Sellare, J., Kouame, C.N., Qaim, M. (2019): Effects of Fairtrade on the livelihoods of poor rural workers. Nature Sustainability 2 (7): 635-642. https://doi.org/10.1038/s41893-019-0311-5.

Morssi, M. (2021): Sustainable Circular Supplier Selection Criteria: An Empirical Study. IEOM Society International, Proceedings of the International Conference on Industrial Engineering and Operations Management. http://ieomsociety.org/proceedings/2021monterrey/695.pdf, accessed: 07.2023.

Müller, A., Kolf, F., Terpitz, K. (2024): Große Mehrheit für Lieferkettengesetz. [Large majority in favor of supply chain law.] In: Handelsblatt, 03.01.2024.

Müller-Hoff, C. (2021): Menschenrechtsfitness von Audits und Zertifizierern? Eine sektorübergreifende Analyse der aktuellen Herausforderungen und möglicher Antworten. [Human rights fitness of audits and certifiers? A cross-sectoral analysis of current challenges and possible answers.] European Center for Constitutional and Human Rights e. V., Brot für die Welt - Evangelisches Werk für Diakonie und Entwicklung e. V. and Bischöfliches Hilfswerk MISEREOR e.V. https://www.ecchr.eu/fileadmin/Fachartikel/ECCHR_AUDITS_DS_WEB.pdf, accessed: 03.2024.

Nasri, S.A., Ehsani, B., Hosseininezhad, S.J., Safaie, N. (2022): A sustainable supplier selection method using integrated Fuzzy DEMATEL-ANP-DEA approach (case study: Petroleum Industry). Environment, Development and Sustainability: 1-37. https://doi.org/10.1007/s10668-022-02590-2.

Naturland (2023): Naturland standards. Extract social responsibility. https://www.naturland.de/en/naturland/what-we-stand-for/quality/naturland-standards.html, accessed: 09.2023.

Newsom, D., Sechley, T., Milder, J.C. (2020): 2019 certification impacts report: Research guides our way forward. Rainforest Alliance. https://www.rainforest-alliance.org/resource-item/impacts-report-2019-impact-study/, accessed: 03.2024.

Nolte, P.J. (2016): Signale als Informationsmedium von Nachfragern zur Beurteilung von Verlässlichkeit im Rahmen der Lieferantenauswahl. [Signals as an information medium for customers to assess reliability in the context of supplier selection.] Nolte, P.J. (Ed.): Verlässlichkeit als Beschaffungskriterium. Signale für die Einhaltung von Anbieterversprechen im Business-to-Business-Bereich. Springer Gabler, Wiesbaden: 171-200. https://doi.org/10.1007/978-3-658-13153-1_5.

Nugraha, I., Hisjam, M., Sutopo, W. (2019): Sustainable Criteria in Supplier Evaluation of the Food Industry. IOP Conference Series: Materials Science and Engineering 598 (1). https://doi.org/10.1088/1757-899X/598/1/012006.

OECD (Organisation for Economic Co-operation and Development) (2019): Agriculture and the environment. agriculture policy brief. https://www.oecd.org/content/dam/oecd/en/topics/policy-sub-issues/agriculture-and-environment/empty-agriculture-and-the-environment/Agriculture%20and%20the%20environment.pdf/_jcr_content/renditions/original.media_file.download_attachment.file/Agriculture%20and%20the%20environment.pdf, accessed: 07.2024.

OECD (2024): Review of G7 Government-led Voluntary and Mandatory Due Diligence Measures for Sustainable Agri-food Supply Chains. https://doi.org/10.1787/f05af4a1-en.

Page, M.J., McKenzie, J.E., … , Moher, D. (2021): The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ (Clinical research ed.) 372: n71. https://doi.org/10.1136/bmj.n71.

Pendrill, F., Gardner, T.A., … , West, C. (2022): Disentangling the numbers behind agriculture-driven tropical deforestation. Science (New York, N.Y.) 377 (6611): eabm9267. https://doi.org/10.1126/science.abm9267.

Propper, S., Knight, P. (2013): 'Conflict free' minerals from the DRC will only be possible if companies stay. New legislation for the disclosure of conflict minerals in companies' supply chains may force many to leave the troubled DRC, but change will only happen if they stay. The Guardian, 04.12.2013.

Radivojević, G., Mitrović, M., Popović, D. (2022): Overview of Criteria and Methods of Machine Learning for Supplier Selection. Logic. 5th Logistics International Conference, Belgrade, Serbia. https://logic.sf.bg.ac.rs/wp-content/uploads/logic_2022_id_26.pdf, accessed: 07.2023.

Radley, B., Vogel, C. (2014): DRC: Conflict minerals movement at a crossroads. Have good intentions and wrong assumptions led to bad results in the struggle against the Congo's „conflict minerals"? Al Jazeera, 11.09.2014.

Rainforest Alliance (2020): Rainforest Alliance Sustainable Agriculture Standard. Supply Chain Requirements. https://www.rainforest-alliance.org/resource-item/2020-sustainable-agriculture-standard-supply-chain-requirements/, accessed: 09.2023.

Rainforest Alliance (2023a): Rainforest Alliance Zertifizierung und darüber hinaus: Nützliche Tools für die Sorgfaltspflicht von Unternehmen. [Rainforest Alliance certification and beyond: Useful tools for corporate tools for corporate due diligence.] https://www.rainforest-alliance.org/de/business-de/das-zertifizierungsprogramm-der-rainforest-alliance-ein-nutzliches-tool-fur-unternehmerische-sorgfaltspflicht/, accessed: 09.2023.

Rainforest Alliance (2023b): How Your Company Can Comply With the German Supply Chain Act. https://www.rainforest-alliance.org/business/tailored-services/how-your-company-can-comply-with-the-german-supply-chain-act/, accessed: 09.2023.

Rainforest Alliance (2023c): Suspensions Lifted on Two Kenyan Tea Certificate Holders. https://www.rainforest-alliance.org/business/suspensions-lifted-on-two-kenyan-tea-certificate-holders/, accessed: 09.2023.

Rink, C., Wagner, S.M. (2007): Lieferantenmanagement: Strategien, Prozesse und systemtechnische Unterstützung. [Supplier management: strategies, processes and technical system support.] In: Brenner, W. (Ed.): Elektronische Beschaffung. Stand und Entwicklungstendenzen. Business Engineering. Springer, Berlin, Heidelberg: 39-62. https://doi.org/10.1007/978-3-540-34018-8_3.

Rocha, J., Nahi, T., Hyrske-Fischer, M. (2021): How does Fairtrade mitigate human rights violations in global supply chains? Fairtrade International, 19.04.2021.

SAI (Social Accountability International) (2014): Social Accountability 8000. International Standard. https://sa-intl.org/resources/sa8000-standard/, accessed: 09.2023.

Sancha, C., Longoni, A., Giménez, C. (2015): Sustainable supplier development practices: Drivers and enablers in a global context. Journal of Purchasing and Supply Management 21 (2): 95-102. https://doi.org/10.1016/j.pursup.2014.12.004.

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H., Jinks, C. (2018): Saturation in qualitative research: exploring its conceptualization and operationalization. Quality & quantity 52 (4): 1893-1907. https://doi.org/10.1007/s11135-017-0574-8.

Schöbel, E., Hellwing, M. (2021): Ergebnisbericht zum Pilotprojekt: Vorbereitung der Thüringer Wirtschaft auf die Umsetzung des Lieferkettensorgfaltspflichtengesetzes (LkSG). [Reporting results of a pilot project: Preparing Thuringian businesses for the implementation of the Supply Chain Due Diligence Act (LkSG).] Thüringer Ministerium für Umwelt, Energie und Naturschutz, Erfurt.

Seller, D., Upmeier, C. (2023): Das Lieferkettensorgfaltspflichtengesetz wirkt - aber vielfach nicht, wie gewünscht. [The Supply Chain Due Diligence Act is effective - but often not as desired.] Deutsche Industrie- und Handelskammer. https://www.dihk.de/resource/blob/97882/906311b0bf7fb8db5b1f564aed4c8d1e/sonderauswertung-lieferketten-going-international-2023-data.pdf, accessed: 07.2023.

Seuring, S., Müller, M. (2008): From a literature review to a conceptual framework for sustainable supply chain management. Journal of Cleaner Production 16 (15): 1699-1710. https://doi.org/10.1016/j.jclepro.2008.04.020.

Stahl, K., Strausz, R. (2016): Certification and Market Transparency. Review of Economic Studies 84 (4): 1842-1868. https://doi.org/10.1093/restud/rdw064.

Starmanns, M., Barthel, M., Mosel, H. (2021): Sozial-Audits als Instrument zur Überprüfung von Arbeitsbedingungen. Diskussion und Empfehlungen im Kontext der öffentlichen Beschaffung. Eine Studie im Auftrag des Beschaffungsamtes des BMI. [Social audits as an instrument for monitoring labour conditions. Discussion and recommendations in the context of public procurement. A study commissioned by the Procurement Office of the Federal Ministry of the Interior.] Beschaffungsamt des Bundesministeriums des Innern und für Heimat, Berlin.

Stević, Ž., Durmić, E., Gajić, M., Pamučar, D., Puška, A. (2019): A Novel Multi-Criteria Decision-Making Model: Interval Rough SAW Method for Sustainable Supplier Selection. Information 10 (10): 292. https://doi.org/10.3390/info10100292.

Stoop, N., Verpoorten, M., van der Windt, P. (2018): More legislation, more violence? The impact of Dodd-Frank in the DRC. PloS one 13 (8): e0201783. https://doi.org/10.1371/journal.pone.0201783.

Taherdoost, H., Brard, A. (2019): Analyzing the Process of Supplier Selection Criteria and Methods. 2351-9789 32: 1024-1034. https://doi.org/10.1016/j.promfg.2019.02.317.

Tudi, M., Daniel Ruan, H., Wang, L., Lyu, J., Sadler, R., Connell, D., Chu, C., Phung, D.T. (2021): Agriculture Development, Pesticide Application and Its Impact on the Environment. International journal of environmental research and public health 18 (3). https://doi.org/10.3390/ijerph18031112.

van Weele, A.J. (2018): Purchasing and supply chain management. 7th edition. Cengage Learning, Boston, Mass, USA.

Weiss, D., Garcia, B., van Ackern, P., Rüttinger, L., Albrecht, P., Dech, M., Knopf, J. (2020): Die Achtung von Menschenrechten entlang globaler Wertschöpfungsketten. Risiken und Chancen für Branchen der deutschen Wirtschaft. [Respect for human rights along global value chains. Risks and opportunities for sectors of the German economy.] Forschungsbericht 543. Bundesministerium für Arbeit und Soziales, Berlin.

Weiss, D., Skinner, A., Hadjuk, T., Knopf, J., von Angerer, A., Klinger, R. (2018): Nachhaltiges Lieferkettenmanagement und Nachhaltigkeitsberichterstattung von Unternehmen. Praxiserfahrungen und Politikempfehlungen. [Sustainable supply chain management and corporate sustainability reporting. Practical experience and policy recommendations.] https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/2018-08-17_texte_63-2018_crs-wertschoepfungskette_0.pdf, accessed: 02.2024.

West, B.T., Blom, A.G. (2016): Explaining Interviewer Effects: A Research Synthesis. Journal of Survey Statistics and Methodology: smw024. https://doi.org/10.1093/jssam/smw024.

Wieck, C., Spiller, A., … , Wesseler, J. (2023): Neue Sorgfaltspflichten für Unternehmen des Agrar- und Ernährungssektors. Empfehlungen zu aktuellen Gesetzesentwicklungen. [New due diligence obligations for companies in the agri-food sector: recommendations on current legislative developments.] Berichte über Landwirtschaft - Zeitschrift für Agrarpolitik und Landwirtschaft 101. https://doi.org/10.12767/buel.v101i3.501.

Winter, S., Lasch, R. (2016): Environmental and social criteria in supplier evaluation - Lessons from the fashion and apparel industry. Journal of Cleaner Production 139: 175-190. https://doi.org/10.1016/j.jclepro.2016.07.201.

Wilhelm, M. (2024): Mandatory due diligence legislation: a paradigm shift for the governance of sustainability in global value chains? Journal of International Business Policy 7 (4): 459-465. https://doi.org/10.1057/s42214-024-00193-4.

Wirtschaft & Menschenrechte (2023): Fragen und Antworten zum Lieferkettengesetz. [Questions and answers on the Supply Chain Act.] https://www.csr-in-deutschland.de/DE/Wirtschaft-Menschenrechte/Gesetz-ueber-die-unternehmerischen-Sorgfaltspflichten-in-Lieferketten/FAQ/faq.html.

Xie, Z., Tian, G., Tao, Y. (2022): A Multi-Criteria Decision-Making Framework for Sustainable Supplier Selection in the Circular Economy and Industry 4.0 Era. Sustainability 14 (24). https://doi.org/10.3390/su142416809.

Zhu, Q., Sarkis, J. (2007): The moderating effects of institutional pressures on emergent green supply chain practices and performance. International Journal of Production Research 45 (18-19): 4333-4355. https://doi.org/10.1080/00207540701440345.

Appendix

Table A1. State of Research - Procedure of the Systematic Literature Review

Inclusion criteria	
Year of publication	All
Languages	English, German
Data base	Googles Scholar
Search field	Title only
Deadline	22 February 2024
Structure of the searches	
Search terms (search field: title only)	Results
LkSG	27
Lieferkettengesetz	41
Lieferkettengesetze	0
Lieferkettengesetzes	9
Lieferketten-gesetz	2
Lieferketten-gesetze	0
Lieferketten-gesetzes	0
Lieferkettensorgfaltspflichtengesetz	28
Lieferkettensorgfaltspflichtengesetze	0
Lieferkettensorgfaltspflichtengesetzes	16
German due diligence	19
„German supply chain" *	25
German supply chain act	16
German supply chain law	5
Literature selection	
Total entries identified	188
1. Screening (n = 188): Entries were excluded if one of the following criteria was met:	
1. Duplicate 2. Bachelor thesis 3. Master thesis 4. Languages being neither English nor German 5. Commentary 6. Lecture	Entries excluded with reasons: 91
2. Screening (n = 97): All abstracts were screened and entries were excluded if the following criterion was not met:	
The entry explores the LkSG and its consequences regarding supplier management	Entries excluded with reasons: 83
3. Screening (n = 14): All full texts were screened and entries were excluded if they did not explore the LkSG and its consequences regarding one of the following aspects:	
1. Supplier evaluation 2. Supplier selection 3. Sourcing decisions 4. Changes to the supplier base	Entries excluded with reasons: 6
4. One exemption was added as it was often cited in the other entries	
Haupt, S., Lichter, J., May, C. (2021): Sorgfaltspflichten entlang globaler Lieferketten. Eine ökonomische Analyse. Handelsblatt Research Institute.	
Studies included in state of research: n=9	

Notes: * „…": searches for the exact combination of the words within
Sources: authors' illustration

Table A2. Transcription Rules (Translated from German)

1. Each speaker contribution is transcribed as its own paragraph, including short interjections from other people such as „Yes", „No", „Exactly". Each paragraph starts with a timestamp (hh:mm:ss) and a speaker abbreviation, as described in point 2.

2. Paragraphs from the interviewing or moderating person(s) are introduced with „JvB:" or „VvB:", while the respondent's contributions are introduced with the abbreviation „I:". To differentiate between multiple people in one recording, the abbreviations are supplemented with numbers („I1:", „I2:", etc.).

3. The transcription is literal, meaning it is not phonetic or summarized. Dialects are not transcribed, but instead translated as accurately as possible into standard German to ensure the text can be searched effectively.

4. The language is lightly smoothed to resemble written German. For example, „Er hatte noch so'n Buch genannt" → „Er hatte noch so ein Buch genannt." The word order, definite and indefinite articles, etc., are corrected if they contain errors.

5. Text segments that do not contribute to sentence structure are smoothed for better readability. For example, „Wir als Unternehmen ich meine so haben uns zu diesem Schritt entschieden" → „Wir als Unternehmen haben uns zu diesem Schritt entschieden."

6. Significant, longer pauses are marked by three ellipses in parentheses „(…)".

7. Incomplete sentences are marked by two ellipses in parentheses „(..)".

8. Especially emphasized words are marked with underlining.

9. Agreeing or confirming vocalizations („mhm", „aha", etc.) are not transcribed unless they interrupt the flow of speech or are a direct response to a question.

10. Fillers like „uhm" are only transcribed if they carry content meaning.

11. External disturbances are noted in double parentheses, including the cause, for example, „((Phone ringing))".

12. Vocalizations such as laughter or throat clearing, as well as non-verbal activities, are not transcribed.

13. Unintelligible words and passages are marked as „(unv.)". Words and passages where the exact wording is uncertain are enclosed in parentheses and marked with a question mark at the end, for example, „(Cocoa?)".

14. Timestamps are inserted at the beginning of each speaker contribution, before the speaker's name.

15. Text passages that are altered for anonymization are marked with square brackets: „Wir als [company name] haben ja gewisse Ansprüche an unsere Lieferanten."

Source: authors` illustration

Table A3. Overview of Coded Categories and Subcategories

Categories and subcategories	Numbers of mentions in coded interviews*
P1 - New criteria and increased weighting in supplier selection	
Identification and assessment of human rights and environmental risks in the supply chain	
Increased collection of information to assess human rights and environmental risks	11/14
Supplier evaluation system updated according with LkSG	7/14
Supplier evaluation system updated beyond LkSG	5 /14
Minor changes to the supplier evaluation system	2/14
No comment	1/14
Weighting of human rights and environmental criteria in supplier selection	
greater attention to selecting suppliers with a low risk of human rights or environmental violations	7/14
Weighting remained unchanged	3/14
No comment	4/14
Threshold of human rights and environmental selection criteria in supplier selection	
no significant adjustments were necessary regarding their human rights and environmental requirements for direct suppliers	14/14
Expansion of the scope of the code of conduct for business partners or of the human rights and environmental requirements for suppliers or both	8/14
suppliers now must sign the code of conduct for Business Partners	8/14
the level of human rights and environmental requirements for suppliers has not increased recently	6/14
P2 - Stronger focus on certifications	
Previous use of certifications with human rights and environmental criteria	
Consideration of external certifications/verifications that include human rights and environmental aspects when selecting suppliers	13/14
Reasons	
important tool for assessing the specific risk of a supplier	8/14
importance of having an independent, external institution carry out risk assessments of suppliers	6/14
certifications or verifications help to prevent human rights or environmental risks in their own supply chains	9/14
considering certifications when selecting suppliers can reduce monitoring effort and costs	7/14
customer requirements are a significant factor in the attention given to certifications in supplier selection	5/14
lack of influence on indirect suppliers and the expertise of certifiers in conducting audits	2/14
considering certifications alone is not sufficient for implementing human rights and environmental due diligence	11/15
Portfolio changes for certifications with human rights and environmental criteria	
No reported change in certification portfolio	10/14
But change could come in the near future	3/14
Changes regarding the way in which certifications are considered in supplier selection	4/14
Impact of corporate due diligence laws on the role of certifications	
LkSG was expected to lead to an increasing demand for certification and verification	12/15
No opinion	2/15
Against an increasing demand	1/15
the legal embedding of corporate due diligence obligations has led both certification and verification bodies to adapt their standards to meet legal and corporate requirements	5/15

P3 - Reduction of the supplier base	
downsizing the supplier base in response to the LkSG is not necessary or beneficial	8/15
reducing the supplier base would jeopardise the company's security of supply	10/14
In certain situations, a reduction could happen	5/15
Reducing the supplier base is beneficial	1/15
No planned or implemented reductions regarding the supplier bases	14/14
Other results	
the implementation of the LkSG had mainly resulted in changes in documentation and reporting	8/15
the LkSG shifts the focus on mitigating human rights risks from indirect suppliers in high-risk countries towards direct suppliers	6/15

*The reported total number of interviews varies between 14 and 15 because one interview was conducted with a trade association. We included only their responses that provided general sector perspectives or expert opinions, excluding any statements on company-specific adaptations to the LkSG. When accounting for this interview, the total number of interviews is 15; otherwise, it is 14.
Sources: authors' illustration