



“Risk Mitigation in Supply Chain through Sustainability Initiative”

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Abstract

Having the risk in business and supply chain management is regular, but know the risk in advance and working on mitigation plan pro-actively is the need of hour for supply chain business managers. Responsible sourcing and Scope-3 has gained significant attention in recent years as organizations recognize the need to address social and environmental impacts associated with their supply chains globally. However, there is a limited understanding of how responsible sourcing initiatives can effectively mitigate Scope 3 emissions, which account for a substantial portion of a company's carbon footprint. This targets to bridge this gap by developing an integrated framework that incorporates responsible sourcing practices and Scope 3 emissions reduction strategies in supply chain management. To support the overall carbon footprint reduction, Scope 3 emissions in supply chain management plays imported role and supplier and service providers are very important stakeholders to meet long-term goal of organization. Scope 3 emissions, which encompass the entire supply chain, from raw material extraction to end-of-life disposal, have often been overlooked. Scope 3 emissions, comprising indirect greenhouse gas emissions from a company's value chain, have not in focus in supply chain management which is one of biggest risk in coming decades. The paper concludes with practical recommendations for managers seeking to integrate Scope 3 emissions management to mitigate supply chain risk

Keywords: Scope 3 emissions, Green supply chain, Responsible sourcing, Sustainability, Procurement, risk mitigation, supply chain

Introduction:

Supply chain management, which includes the complete process of controlling the flow of goods and services from the procurement of raw materials to the delivery of finished products to customers, is essential to the success of any firm. The impact of supply chains on the environment and society has become a pressing concern for organizations globally. In the vision for environmental sustainability and competitive advantage, manufacturing companies are increasingly focusing on Scope 1 (direct emissions) and Scope 2 (indirect emissions from purchased energy) emissions. However, Scope 3 emissions, which encompass the entire supply chain, from raw material extraction to end-of-life disposal, have not been in focus. This paper argues that incorporating Scope 3 emissions management into supply chain strategies can lead to significant improvements in performance and provide a pathway to sustainable and competitive advantage.

The concept of responsible sourcing has gained significant attention in recent years as organizations recognize the need to address social and environmental impacts associated with their supply chains. However, there is a limited understanding of how responsible sourcing initiatives can effectively mitigate Scope 3 emissions, which account for a substantial portion of a company's carbon footprint. This will focus on Scope 3 emissions reduction strategies in supply chain management.

The global community has witnessed an increasing focus on sustainable practices within supply chain management. This article seeks to explore the concepts of responsible sourcing and Scope 3 emissions reduction, evaluating their importance and practical applications. As global awareness of climate change and environmental sustainability continues to grow, businesses



are increasingly recognizing the importance of addressing their carbon footprints. Among the various aspects of supply chain management, responsible sourcing and Scope 3 emissions reduction have emerged as critical components to achieve sustainability goals. This article provides a comprehensive review of the current practices and challenges associated with responsible sourcing and Scope 3 emissions reduction in supply chain management. The discussed practical approaches that can be adopted to ensure a greener and more sustainable supply chain.

Responsible Sourcing:

Responsible sourcing involves procuring goods and services from suppliers who demonstrate ethical and sustainable practices, minimizing negative environmental and social impacts. The key components of responsible sourcing, including supplier evaluation, certifications, traceability, and stakeholder engagement. By adopting responsible sourcing practices, companies can effectively mitigate environmental risks and enhance their brand reputation.

Understanding Scope 3 Emissions:

Scope 3 emissions encompass the indirect greenhouse gas emissions generated by a company's value chain, including the entire supply chain, transportation, and product use. Identifying and quantifying Scope 3 emissions can be challenging, but it is essential to comprehensively assess an organization's overall carbon footprint. This section explores methodologies and tools to calculate Scope 3 emissions, along with the potential barriers companies might encounter during the process.

The connect between Responsible Sourcing and Scope 3 Emissions Reduction:

This section highlights the interconnection between responsible sourcing and Scope 3 emissions reduction. It examines how sustainable sourcing practices can influence the overall carbon footprint of a company by reducing emissions from its supply chain. Additionally, case studies and real-world examples illustrate how certain companies have successfully integrated responsible sourcing strategies to achieve significant Scope 3 emissions reductions.

The failure mode and effect analysis (FMEA) technique is utilised to assess the relative importance of the selected risks, to identify their potential causes and effects and test potential correlations between the identified risks. Based on the findings of the study, risk treatment strategies are proposed for all the identified sustainability-related supply chain risks. The findings show that endogenous environmental risks are perceived to be the most important across different industries and the interconnectedness between several sustainability-related risks is very high. This points to the need for integrated sustainability risk management approaches to facilitate the development of effective sustainable strategies.

Challenges and Limitations:

While responsible sourcing and Scope 3 emissions reduction are pivotal components of sustainable supply chain management, there are numerous challenges that organizations face when implementing these strategies. This section explores issues such as supply chain complexity, data availability, supplier collaboration, and the need for cross-industry cooperation and how to measure the scope-3.

Practical Approaches to Responsible Sourcing and Scope 3 Emissions Reduction: Drawing from successful case studies and existing research, this section provides practical guidelines and approaches that businesses can adopt to incorporate responsible sourcing and Scope 3 emissions reduction in their supply chain management. UN Goal for sustainable develop is shown in Fig.1



Fig. 1 The United Nations 17 Sustainable Development Goals (United Nations, 2021)

Raw materials, we aim to have sustainability action plans in place for our major raw material and packaging supply chains – known as our Raw Materials Responsible Sourcing Framework. We recognise the need for a long-term approach to driving transparency and continuous improvement in key areas of our supply chain back to the source of origin.

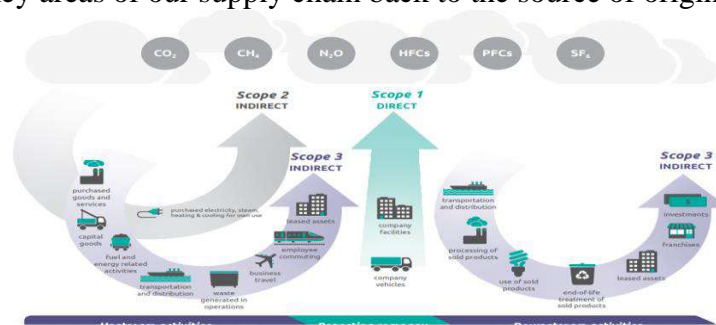


Fig 2 : Scope 1, Scope 2, Scope 3 (Source GHG and WEF)

Scope 3 emissions

These are also indirect emissions – meaning those not produced by the company itself – but they differ from Scope 2 as they cover those produced by customers using the company’s products or those produced by suppliers making products that the company uses. “Scope 3 emissions are nearly always the big one,” says Deloitte, adding that it often accounts for more than 70% of a business’ carbon footprint. Companies can normally easily measure their Scope 1 and 2 emissions, and can control them by taking steps like switching to renewable energy or electric vehicles. But Scope 3 emissions are under the control of suppliers or customers, so they are affected by decisions made outside the company. That means measuring Scope 3 emissions involves tracking activities across the entire business model – or value chain – from suppliers to end users.

Emission control ways in supply chain management

Opportunities and Benefits of Scope 3 Emissions Management: This section outlines the various opportunities and benefits associated with effectively managing Scope 3 emissions. It emphasizes the potential for improved operational efficiency, reduced carbon footprint, enhanced supplier collaboration, and better risk management.

Quantifying the Impact of Scope 3 Emissions Management: Using data analysis and modelling techniques, this section quantifies the financial and environmental impact of Scope 3 emissions management. It provides insights into potential cost savings, emissions reductions, and return on investment.

Some KPIs are important: cost per kwh, quality, capacity, service, delivery, Inventory, ROI ... but so is sustainability. When we first started to talk about this, no one listened. In the last few years it has finally become important for companies.

Collaboration Is the Way Forward

I think procurement has an enormous responsibility to explore innovative ideas that will bring benefits to the company with collaboration. Right now, the benefit is not very clear because there’s no carbon pricing included. Ultimately, consumers are asking for reduced CO2



footprints on products, so you'll have to trickle this down to the supply chain and make it happen. That is the future, collaborate with suppliers for green initiative and reward them.

Consumers Want to Save the World

The environmental and social arguments of sustainability are compelling reasons for change in themselves, but they are not the only ones pushing companies to clean up their acts. There are compelling dollar-related reasons as well. Want to see the companies they buy from “taking action to improve the world we live in.”

Procurement Leadership team to drive these initiative

It is time for procurement to come out of the shadows. It is time for procurement, too often considered the poor relation in comparison to the more dominant business functions such as R&D, manufacturing, or sales to show that it can spearhead real, transformational change that will benefit the entire company. It is time for procurement to be seen in a new light and we think the timing could not be better.

We believe purpose for procurement—to create value beyond a sole focus on price by finding the best outcomes together with other stakeholders within the company and externally with suppliers. This value can be added by focusing on resilience, sustainability, and appropriate cost levels. This is the pathway to healthy revenues and profit, improved quality, satisfying consumers' desires, speed to market, innovation, and growth. It is also the pathway to non-financial benefits that will be felt by society at large and the environment in years to come (Fig. 3).

Procurement is now on the agenda of CEO, and this rise to combined with its leading role in sustainability, means it will attract the right talent and more resources.

It is time for procurement to become the driver of sustainability transformation and prompt the re-evaluation of existing processes, influencing product design, proactively suggesting sustainable material substitutes, and to become the catalyst to transform company culture.

Sustainability is not just a bolt-on to procurement's day-to-day operations—it is on a par with quality and cost factors that might normally be key drivers of procurement decisions and should therefore be integrated into existing processes

Supply Chain & Procurement Purpose driven with Integrity on Top

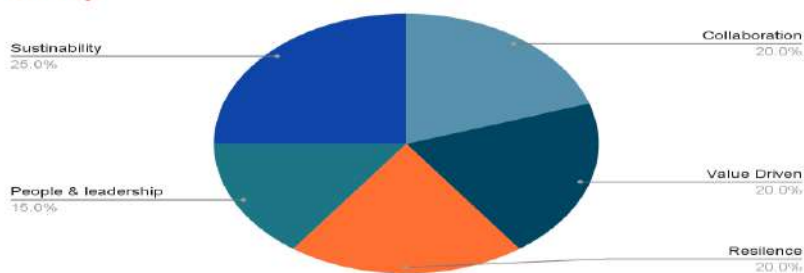


Fig. 3 Supply chain and procurement purpose driven with Integrity on Top.

This is where procurement is firmly in the driving seat. It is procurement that is responsible for proactively challenging material choices and looking for alternatives when existing materials fail to meet newly defined sustainability guidelines. Performance indicators in this area therefore need to focus on core procurement processes such as supplier or category management.

We're not there yet, but companies are going to reduce scope 1 and scope 2 emissions rapidly but they'll struggle to reduce scope 3 emissions. Then they'll look at procurement offices and ask 'what are you going to do about this?' Procurement leaders need to be at the forefront in the struggle to reduce scope 3 emissions—they need to know that this is coming so they should already get started. Procurement has the ability to help deliver sustainable business growth by



uniting the environmental, social, and economic impacts of the organization and also by aligning its ecosystem with the strategy.

Employee Expectations: Do the Right Thing

Studies have shown that younger generations are more drawn to companies with a purpose, where they can feel a sense of belonging and have an impact that contributes to the company agenda and to the greater good. Employers are keen to follow the value 'Doing the right things' and contribute to the bigger purpose of sustainability.

Sustainable supply chain management

Supply chain management is about managing a network of links where goods or services get delivered to the customer best. In a sustainability context, it gives organizations the capacity to accumulate information about how well every part of the supply chain exhibits social and environmental duty. (Source: Managing carbon footprint for a sustainable supply chain: a systematic literature review)

Research methodology:

The quantitative data collection involves analyzing carbon emissions data from supply chain operations, with a specific focus on Scope 3 emissions.

To illustrate the practical application of the framework, a case study analysis is conducted. The case study focuses on a multinational company operating in the manufacturing industry and examines its efforts to implement responsible sourcing practices and reduce Scope 3 emissions. The analysis includes identifying the key challenges faced, the strategies employed, and the outcomes achieved by the company.

Key initiative and recommendations to mitigate the risk in Supply chain

1. The results of the case study analysis will be discussed in detail, highlighting the successful implementation of responsible sourcing practices and the subsequent reduction in Scope 3 emissions.
2. The discussion will address the key factors that influenced the effectiveness of the strategies employed, as well as any limitations or barriers encountered during the implementation process.
3. Emissions Reduction in Supply Chain Management: A Practical Review
4. In the upstream and downstream of Scope-3 the major responsibility to drive the emission reduction stay with service provider and suppliers. It is recommended to practice following:
5. Make a core team who can collaborate with suppliers to understand their level of engagement in terms of sustainability and their vision for next 10 years
6. Identify 80:20 ratio action items, means 20% items which contributes 80% of emissions, actually if supplier will improve their emission control initiative which will accounted in customer emission as well – hence we call it scope-3. Alone it can't be achieved.
7. Few examples to enforce across all the industry are as below with your supplier & service providers
8. Move to Solar Power for electricity
9. Source PNG instead of LPG for utilities
10. Implement CNG trucks for local transportation to receive the goods
11. Plan to move to EV for trucking and goods delivery
12. Solid waste management and recycling plant within company
13. Follow RRR-E (Reduce, Re-use, Re-cycle and Eliminate) plastics
14. Plant Tree as much as possible by employee, customer, suppliers
15. Have vehicle which gives more average on fuel consumption
16. Reduce your air freight to bring and send the material
17. Promote use of Cycle to work place by employee



18. Use of technology to capture emissions and AI for pro-active risk mitigation
19. Depute a team who controls the business travel and use of virtual technology
20. Don't use child labour and engage associates to work with society as CSR
21. Buy material keeping end of product life cycle and how that will be disposed off
22. Since 70% is Scope-3 hence it is recommended that we drive this emission reduction initiative well with our supplier, educate them, help them to measure and together achieve the goal. It can be driven very well by our procurement team with material supplier and service providers.
23. Pro-actively do the FMEA and take the corrective action and know the risks in advance to have better mitigation plan in overall supply chain

Conclusion:

In summary, this paper sheds light on the critical need for integrating Scope 3 emissions management and responsible sourcing initiatives into supply chain strategies in the present context to mitigate the supply chain risks thru supply chain initiative. Our analysis emphasizes the pressing requirement for businesses to address these issues to reduce risks within the manufacturing sector in the coming decades. The study underscores that managing Scope 3 emissions is not merely an environmental obligation; rather, it confers organizations with a competitive advantage in an ever-evolving market landscape. This research offers actionable insights and practical recommendations tailored for managers and vendors aiming to enhance supply chain performance and foster sustainable business practices through the effective leverage of Scope 3 emissions reduction strategies and mitigate risk for future.

Furthermore, this paper advocates for a collective effort involving practitioners, policymakers, and businesses to enhance responsible sourcing initiatives and systematically reduce carbon footprints across the entire supply chain. The study recognizes the pivotal role of governments in fostering a focus on Environmental, Social, and Governance (ESG) criteria. By intensifying efforts towards an environmentally friendly end-to-end supply chain, with particular emphasis on product life cycle and end-of-life considerations, significant strides can be made in both environmental preservation and individual and corporate safeguarding. Allocating dedicated resources and attention to addressing these gaps is paramount.

Looking ahead, the study also identifies a promising avenue for future research and implementation. Specifically, there is immense potential in leveraging technology to enhance measurement methods related to Scope 3 emissions. By incorporating innovative technological solutions, businesses can refine and optimize their Scope 3 efforts, thereby contributing substantially to the ongoing battle against climate change.

As businesses increasingly recognize the urgency of combatting climate change, integrating responsible sourcing and Scope 3 emissions reduction into supply chain management becomes indispensable. This research underscores not only the significance of these practices but also provides a practical roadmap for their implementation. By embracing sustainability and demonstrating a steadfast commitment to environmental responsibility, organizations can significantly diminish their carbon footprint. Moreover, they can position themselves as trailblazers in the global pursuit of a greener, more sustainable future, thereby contributing meaningfully to saving our planet for the next generation.

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