

Deforestation, global value chains, and corporate sustainability

1 | INTRODUCTION

Deforestation is the second single largest source of greenhouse gas emissions after the energy sector. Emissions from deforestation and forest degradation far exceed those produced by all the world's cars, airplanes, and ships combined. They also exceed emissions caused by all industrial activities within the European Union (Seymour & Busch, 2016). It is for these reasons that the Paris Agreement includes specific provisions to combat deforestation and forest degradation precisely because arresting deforestation is a vital component of global efforts to limit warming to 2°C. In addition, deforestation destroys critical wildlife habitats, which has caused, and continues to threaten, species extinction, increases the spread of zoonotic diseases through enhanced human-wildlife interactions, and decimates livelihoods of millions of forest-dependent Indigenous and rural communities in the most impoverished regions of the world (Barraclough & Ghimire, 1995; Newton & Benzeev, 2018). Stopping deforestation is one of the most urgent and complex environmental challenges of our times (Busch & Ferretti-Gallon, 2017; Geist & Lambin, 2001; Seymour & Harris, 2019).

Recognition of the role of commercial activity in causing widespread deforestation has led a range of global corporations, including major retail brands, to take proactive efforts along global value chains aimed at combatting deforestation (Haupt et al., 2017). While corporate initiatives to stop deforestation have proliferated in recent years, deforestation too has been expanding. Now is the time for corporate sustainability and value-chain scholars to join and augment multidisciplinary efforts to understand the causes of and find solutions for ameliorating deforestation and forest degradation. Such an effort requires embracing, rather than avoiding, the highly complex and multilayered interaction between business activities and deforestation (Nepstad et al., 2014). The aim of this Special Issue is to stimulate such research. Contributions from all disciplines are welcome. The Special Issue will comprise both empirical (quantitative, qualitative, mixed methods, case studies) and conceptual papers. All papers published in this Special Issue will articulate specific implications for business strategy.

There are three thematic areas that papers published in the Special Issue will address:

- I. articulating linkages between business activities, deforestation, and forest degradation;
- II. analyzing the effectiveness of ongoing corporate initiatives to reduce deforestation, including analyses of deforestation disclosures;

- III. conceptualizing deforestation-free business models based on circular economy, local production and distribution networks, and technological innovations.

2 | THEME I: LINKAGES BETWEEN BUSINESS ACTIVITIES AND DEFORESTATION

Three major causes of deforestation include converting natural forests into crop lands, clearing forests for infrastructure development, and mining operations. The pressure to expand crop lands is continually rising due to a growing human population and associated consumption (e.g., Camargo, Hogarth, Pacheco, Nhandumbo, & Kanninen, 2019). This, in turn, leads to a demand to convert forests to produce four key commodities—beef, palm oil, soy, and wood fiber.

These four commodities form the backbone of supply chains for companies primarily in the food, fuel, fashion, feed, and fiber sectors. In addition, other sectors contribute to deforestation indirectly. For example, airlines and automobile manufacturers purchase large quantities of tires, which are made of rubber grown on large-scale plantations that are often developed on converted natural forests. While it is commonly understood that industrial value-chains and deforestation are linked (Mammadova, Behagel, & Masiero, 2020), corporate sustainability and valuechain scholars have yet to systematically articulate the precise nature of these links. New research is needed to:

1. develop conceptual and theoretical frameworks to explain linkages between industrial valuechains in various industry sectors and deforestation;
2. develop typologies to organize and synthesize linkages between industrial value-chains and deforestation;
3. identify sectoral and geographical differences in origins and patterns of linkages between industrial value chains and deforestation.

3 | THEME II: CORPORATE INITIATIVES TO REDUCE DEFORESTATION

A large number of corporations participate in four types of initiatives to curb deforestation (Lambin et al., 2018).

Coalition participation includes private and public-private partnerships such as the New York Declaration on Forests, the Tropical

Forest Alliance, and the Forest Positive initiative of the Consumer Goods Forum. *Companies pledges* turn to zero-deforestation commitments by disclosing their actions and tracking their progress. They are often assisted by third parties, such as the Carbon Disclosure Project (CDP) and Global Canopy, which annually publish the progress of participating companies in achieving zero-deforestation impacts in their value chains. These efforts can also extend well beyond traditional value chain initiatives and may involve such initiatives as taken by the office space company WeWork, which has committed not to hold any staff events, or expense meals, that include meat. *Codes of conduct*, often developed through corporate sustainability initiatives, specify appropriate sourcing policies, standards for selection of suppliers, supplier monitoring, and network collaborations. Many major brands, especially in the food sector, develop codes of conduct aimed at reducing their deforestation footprint. Finally, *sectoral standards* are commonplace; the Roundtable on Sustainable Palm Oil (RSPO), Forestry Stewardship Council (FSC), the Program for the Endorsement of Forest Certification (PEFC), and the Round Table for Responsible Soy (RTRS) have all been developed to identify “credible” standards for sustainable commodity production and turn to independent third parties to assure corporate compliance. The cattle sector—despite currently being the leading cause of deforestation—has yet to witness a full-fledged certification program. However, the Leather Working Group (LWG) for deforestation-free leather products and the Global Roundtable for Sustainable Beef (GRSB) are heading in this direction.

Studies such as the following would fit this theme:

1. analyzing corporate deforestation disclosures including the analyses of disclosure frameworks;
2. comparatively analyzing the various approaches to ensure deforestation-free supply chains;
3. analyzing effectiveness and influence of certification programs in different sectors in reducing deforestation;
4. analyzing individual companies' initiatives to reduce their forest footprint.

4 | THEME III: TOWARD DEVELOPING DEFORESTATION-FREE BUSINESS MODELS

Corporate efforts to reduce deforestation have not produced desired results. Piecemeal initiatives are often met with social, political, technological, and commercial obstacles (Dauvergne & Lister, 2010; Van der Ven, Rothacker, & Cashore, 2018). Debates in the policy realm have identified numerous such obstacles (Bager, Persson, & Reis, 2020; Nolte, de Waroux, Munger, Reis, & Lambin, 2017), but it is not clear in what ways businesses can effectively address deforestation. There is a need for developing viable business models that are scalable and have transformative effects not only in deforestation-intensive sectors but also beyond. Technological innovations aimed at product tracing (e.g., blockchain), genetic modifications for increased yields, and development of alternative products are underway. By and large, promising technology is available, but it remains unclear as to

how companies can create and capture value by creating business models around such technologies. Economy-wide policy changes may be necessary, and therefore, stopping deforestation may have to be linked with such initiatives as development of circular economy (Kirchherr, Reike, & Hekkert, 2017; Panwar & Niesten, 2020) and local production and supply networks (Panwar, 2020). Yet most efforts to date assume that some type of market-based solution is necessary to stop deforestation. This requires assessing whether, when, and how consumer support and willingness to change consumption patterns can aid in stopping deforestation. In addition, corporate strategy changes such as vertical integration of supplychains could be a possible venue for companies to make their supplychains free of deforestation (Murcia, Panwar, & Tarzijan, 2020).

This theme will analyze topics such as the following:

1. fostering entrepreneurship and innovation to stop deforestation;
2. envisioning deforestation-free business models in different sectors;
3. addressing deforestation and forest degradation through circular economy initiatives;
4. analyzing the role of consumers in reducing deforestation and forest degradation;
5. conceptualizing changes in corporate strategy to reduce forest footprint.

Submission process and deadlines

Interested authors are encouraged to submit a **6-page long initial draft** (double space, 12 font size) to corresponding Guest Editor Rajat Panwar (panwarr@appstate.edu) through email by **March 30, 2021**. The Guest Editors will provide developmental feedback and invite authors of suitable proposals to submit a full paper for the Special Issue. **In addition, we encourage interested authors to contact Guest Editors to discuss initial ideas for papers.**

The deadline for submission for full papers is **September 1, 2021**. Authors should submit full papers via email to the corresponding guest co-editor Rajat Panwar (panwarr@appstate.edu). Papers should be prepared following the *Business Strategy and the Environment* author guidelines: <https://onlinelibrary.wiley.com/page/journal/10990836/homepage/forauthors.html>.

All papers will be subjected to double-blind peer review in accordance with the policies of *Business Strategy and the Environment*.

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REFERENCES

- Bager, S., Persson, M., & Reis, T. (2020). Reducing Commodity-Driven Tropical Deforestation: Political Feasibility and 'Theories of Change' for EU Policy Options. Available at SSRN: <https://ssrn.com/abstract=3624073>, <https://doi.org/10.2139/ssrn.3624073>
- Barracough, S., & Ghimire, K. (1995). *Forests and livelihoods: The social dynamics of deforestation in developing countries*. New York: Springer.
- Busch, J., & Ferretti-Gallon, K. (2017). What drives deforestation and what stops it? A meta-analysis. *Review of Environmental Economics and Policy*, 11(1), 3–23. <https://doi.org/10.1093/reep/rew013>
- Camargo, M. C., Hogarth, N. J., Pacheco, P., Nhantumbo, I., & Kanninen, M. (2019). Greening the dark side of chocolate: A qualitative assessment to inform sustainable supply chains. *Environmental Conservation*, 46(1), 9–16. <https://doi.org/10.1017/S0376892918000243>
- Dauvergne, P., & Lister, J. (2010). The prospects and limits of eco-consumerism: Shopping our way to less deforestation? *Organization & Environment*, 23(2), 132–154. <https://doi.org/10.1177/1086026610368370>
- Geist, H. J., & Lambin, E. F. (2001). What drives tropical deforestation. *LUCC Report Series*, 4, 116.
- Haupt, F., Streck, C., Bakhtary, H., Behm, K., Kroeger, A., & Schulte, I. (2017). Zero-deforestation commodity supply chains by 2020: Are we on track. *Background Paper Prepared for the Prince of Wales' International Sustainability Unit*. Available at: <https://www.climatefocus.com/sites/default/files/20180123%20Supply%20Chain%20Efforts%20-%20Are%20We%20On%20Track.pdf>
- Kirchherr, J., Reike, D., & Hekkert, M. (2017). Conceptualizing the circular economy: An analysis of 114 definitions. *Resources, Conservation and Recycling*, 127, 221–232. <https://doi.org/10.1016/j.resconrec.2017.09.005>
- Lambin, E. F., Gibbs, H. K., Heilmayr, R., Carlson, K. M., Fleck, L. C., Garrett, R. D., ... Nolte, C. (2018). The role of supply-chain initiatives in reducing deforestation. *Nature Climate Change*, 8(2), 109–116. <https://doi.org/10.1038/s41558-017-0061-1>
- Mammadova, A., Behagel, J., & Masiero, M. (2020). Making deforestation risk visible. Discourses on bovine leather supply chain in Brazil. *Geoforum*, 112, 85–95. <https://doi.org/10.1016/j.geoforum.2020.03.008>
- Murcia, M. J., Panwar, R., & Tarzijan, J. (2020). Socially responsible firms outsource less. *Business & Society*. <https://doi.org/10.1177/0007650319898490>
- Nepstad, D., McGrath, D., Stickler, C., Alencar, A., Azevedo, A., Swette, B., ... Armijo, E. (2014). Slowing Amazon deforestation through public policy and interventions in beef and soy supply chains. *Science*, 344(6188), 1118–1123. <https://doi.org/10.1126/science.1248525>
- Newton, P., & Benzeev, R. (2018). The role of zero-deforestation commitments in protecting and enhancing rural livelihoods. *Current Opinion in Environmental Sustainability*, 32, 126–133. <https://doi.org/10.1016/j.cosust.2018.05.023>
- Nolte, C., de Waroux, Y. L. P., Munger, J., Reis, T. N., & Lambin, E. F. (2017). Conditions influencing the adoption of effective anti-deforestation policies in South America's commodity frontiers. *Global Environmental Change*, 43, 1–14. <https://doi.org/10.1016/j.gloenvcha.2017.01.001>
- Panwar, R. (2020). It's time to develop local production and supply networks. *California Management Review*. Available at: <https://cmr.berkeley.edu/2020/04/local-production-supply-networks/>
- Panwar, R., & Niesten, E. (2020). Advancing Circular Economy. *Business Strategy and the Environment*, 29(6), 2890–2892. <https://doi.org/10.1002/bse.2602>
- Seymour, F., & Busch, J. (2016). *Why forests? Why now?: The science, economics, and politics of tropical forests and climate change*. Washington, DC: Brookings Institution Press.
- Seymour, F., & Harris, N. L. (2019). Reducing tropical deforestation. *Science*, 365(6455), 756–757. <https://doi.org/10.1126/science.aax8546>
- van der Ven, H., Rothacker, C., & Cashore, B. (2018). Do eco-labels prevent deforestation? Lessons from non-state market driven governance in the soy, palm oil, and cocoa sectors. *Global Environmental Change*, 52, 141–151. <https://doi.org/10.1016/j.gloenvcha.2018.07.002>