

A photograph of a large herd of white cows, likely Brahman or similar breed, standing in a field under a clear blue sky. The cows are looking in various directions, some towards the camera. The image is framed by a brown leather-like border with white stitching.

## Leather Also Has a Role to Play in the Fight Against Deforestation

### EXECUTIVE SUMMARY

In recent years, circularity has gained a lot of traction, leading companies to consider whole product lifecycles, and how their impacts are interrelated, rather than viewing each product in isolation. Leather is steeped in circularity and indeed is one of the oldest forms of upcycling, yet lately it has been viewed negatively for the environmental impacts and animal welfare issues of cattle production. The reality isn't so simple; there are many benefits to using leather as a byproduct of cattle production, but these benefits need to be taken into context while considering the responsibility of companies that use leather to influence sustainable practices, particularly eliminating deforestation and conversion in the supply chain. The whole lifecycle of leather, as well as leather substitutes, should be considered when companies make materials decisions.

The leather industry's largely untapped potential for influence could be significant, as any additional income or other business benefits that beef producers receive for deforestation and conversion-free (DCF) hides strengthens their economic position while simultaneously providing leverage for purchasers of hides and leather. This presents both positive (potential for premiums or differentiated market or even new business models and practices) and negative (possible loss of markets/market access) incentives for pursuing DCF beef and leather production. By collaborating with the beef and dairy industries, working with slaughterhouses and their supply chains back to direct and indirect suppliers, and increasing consumer awareness of leather's sustainability potential, the leather industry can further deepen leather's enduring sustainability legacy and ensure its environmental impact is minimal.

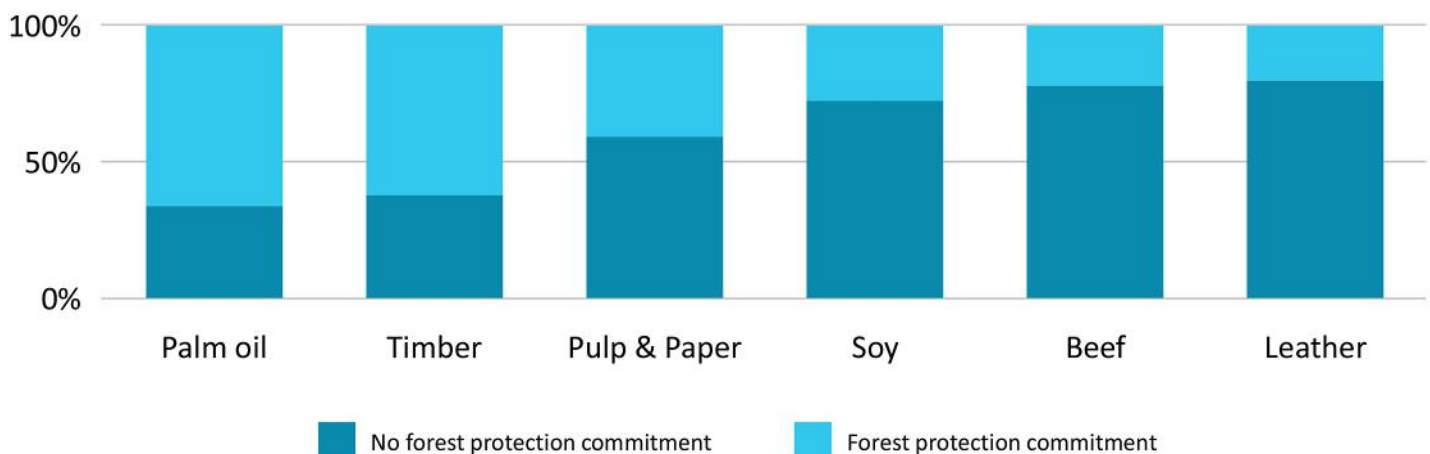
# INTRODUCTION

Leather is entirely a byproduct of the beef and dairy industries; without them, there would be no leather industry. Studies indicate that for a 1% increase in cattle price, there is only a 0.1-0.2% increase in supply produced.<sup>1</sup> As leather is already a very small portion of the overall value of cattle, this demonstrates that it has little to no influence on cattle supply. And indeed, global growth of beef demand is considerably outpacing leather demand. If leather products are not made from hides produced by the beef and dairy industries, the hides are typically either made into gelatin or get landfilled, the latter of which results in the release of methane, as well as adding to costs rather than increasing income. Meanwhile, vegan “leather” and other substitutes are often made of plastic, which is created from fossil fuels.<sup>2</sup> And, while some regions have less cattle-related deforestation risk than others (i.e. even if leather is sourced from European cows), there will likely be feed corn or soy coming from potential deforestation (from Brazil (BR), Paraguay (PR), or Argentina (AR)) or grassland conversion (US, BR, AR) areas, making changes at origin critical.

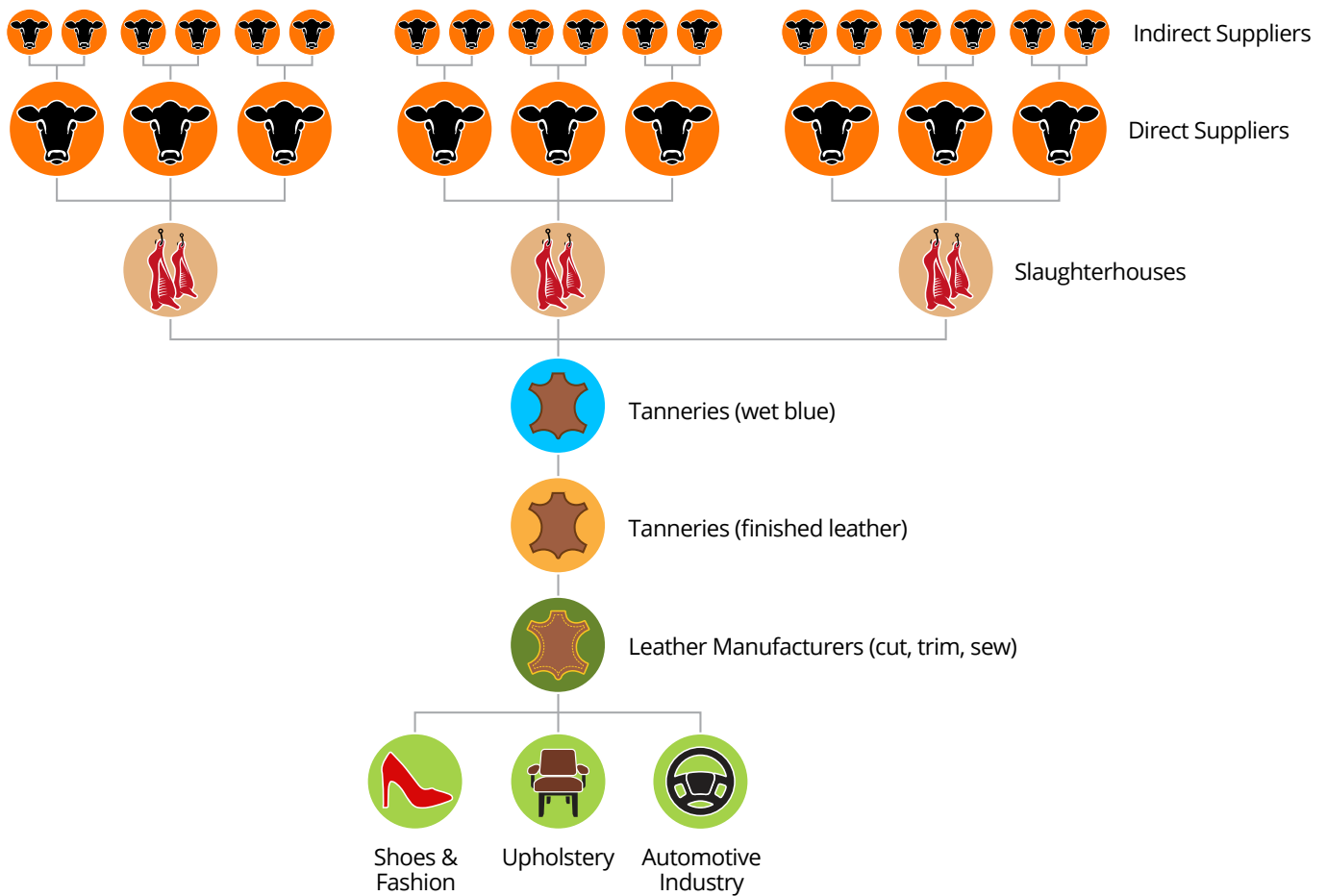
All companies purchasing hides or leather anywhere along the value chain have a role to play in driving more sustainable production. From direct influence over their operations, to tannery practices, to eliminating deforestation and conversion in their supply chains, to improving overall efficiency and productivity, leather companies hold a unique lever within the supply chain that they can pull to both encourage and support sustainable principles. Although leather is a byproduct of cattle production, the leather industry’s needs, opportunities, and challenges are distinct. In Brazil for example, around 20% of beef is exported while around 70% of hides are exported.<sup>3</sup>

Given leather’s status as a luxury good and association with quality, consumer pressure for and awareness of sustainable practices is higher than for alternatives such as plastic. Added to this, within Europe, where many luxury brands are housed, there are stronger pushes to legislate deforestation-free products, as well as a greater level of demand from consumers for more sustainably produced products. Despite this, Forest 500 has consistently found that the leather industry is lagging behind in commitments to protecting forests.<sup>4</sup>

**Figure 1:** Commodity sector scores in the Forest 500 Report



**Figure 2: Leather supply chain**



## BYPRODUCT VERSUS DEFORESTATION DRIVER

In 2018, 302.18 million cattle (including buffalo) were slaughtered for meat.<sup>5</sup> While it is difficult to get an accurate number of total hides used for leather production, far more hides are produced from cattle production each year than are used for leather. In the US alone, some industry experts estimate that around 17% of hides are wasted.<sup>6</sup> While these numbers are difficult to verify, the trend is illustrated by the decrease in hides' market value since 2014. It is likely that global waste is considerably higher, though concrete numbers are hard to come by.

Beef is a major driver of deforestation and conversion of habitat in Latin America, and leather is inextricably linked to the beef industry.

Companies that purchase leather have the potential to influence the beef industry, as the additional income made from hides increases its economic viability. However, the issue of leather's links to deforestation and conversion are complicated; most leather wouldn't exist without the beef industry, nor would cattle be slaughtered solely for the provision of hides. As such, leather-purchasing companies bear responsibility for influencing responsible production. At the same time, however, use of leather as a byproduct ensures both greater income for producers and lets less of an animal that is already going to be slaughtered go to waste, which would create additional greenhouse gases by sitting in a landfill.

The nuance is important, however: leather-purchasing companies are not absolved from the need to address deforestation and conversion in their supply chains. Nor should they ignore the opportunity to use their influence to advocate for appropriate policies, join cross-industry coalitions with the beef and dairy industries to actively work on these issues as a united front, and ensure that producers are supported in production that roots out deforestation and conversion. It is also true that the leather industry's use of hides from animals that were already going to be slaughtered is better for the environment and the economy than simply discarding them.

“The US produced 33 million hides in 2019 and 5.5 million, or about 17%, ended up destroyed by burning or in landfills.”

*Stephen Sothmann, President  
Leather and Hide Council of America*



## Leather in the Auto Industry

Around 20% of leather is absorbed by the auto industry for vehicle interiors. The auto interior sector is largely concentrated in four companies that make up nearly 80% of the industry. The additional margin afforded to producers from the sale of hides gives players in the leather industry considerable influence, making them vital to efforts to eliminate deforestation and conversion in their supply chains, an issue that has remained pervasive as demonstrated by a 2021 New York Times investigation.<sup>7</sup> For auto interiors, which represents the largest use of Brazilian leather,

this pressure is particularly important due to elevated rates of habitat conversion in Brazil.

As auto manufacturers move towards hybrid and electric vehicles, considering the impact of other auto components like interior materials is critical to considering the industry's overall sustainability position. Leather upholstered vehicles depreciate more slowly, providing both environmental (longer lasting, less time to biodegrade) and economic value (less frequent purchasing).

Some companies with DCF commitments are abandoning difficult geographies such as Brazil to instead source their leather from countries with little to no risk of deforestation and conversion. While this may temporarily enable a company to make progress on their commitments on the surface, it will not serve to eliminate deforestation and conversion. If responsible companies leave challenging geographies, it will become more difficult to positively influence transformation in those geographies. Additionally, given feed ingredients' role (particularly soy) in deforestation

and conversion, companies need to work on traceability regardless of where they source their hides, due to the embedded deforestation in cattle production from feed ingredients. This is an issue even within Europe and the US, where deforestation is not typically considered. Companies can amplify their impact by working within their supply chain to incentivize DCF production and support producers through incentives, financing, and cross-industry coalitions that work to influence government policy and support market transformation at scale.



## DEFORESTATION-FREE LEGISLATION

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In November 2021, the European Parliament proposed a law to prevent importation of products linked to deforestation and conversion from forest and ecosystems-risk commodities (FERCs), which includes the soy, beef, and by association, leather, supply chains, among others. The EU Commission drafted a law proposal that the EU Parliament and EU Council (member countries) passed in September 2022. Currently the EU parliament, the EU council and the EU commission are debating the final text to reach consensus. Although the proposed law has some deficiencies (e.g. the focus is only on forests and it ignores grassland and habitat conversion more generally), it establishes the requirement of full traceability to the farm and plantation level and has the potential to drive transformation in deforestation and conversion-free supply chains by forcing countries and companies to trace products back to their origin to ensure they are free from deforestation.<sup>8</sup>

Similarly, the UK passed the Environment Act in

2021 and, after an open consultation in 2022, will pursue secondary legislation for due diligence provisions related to tackling illegal deforestation. In 2014, France passed the French Corporate Duty of Vigilance Law which, while not explicitly mentioning deforestation, dictates that French companies address adverse planetary impacts resulting from their businesses. Deforestation and habitat conversion can be considered as part of compliance given their detrimental impact on climate change and biodiversity.

These laws, existing and forthcoming, have the potential to add considerable pressure on the leather market given the proportion and value of hides that are imported into Europe from areas with deforestation risk, particularly Brazil, Argentina, and Paraguay. Companies purchasing leather can act now and prepare their supply chains, incentivizing producers to move towards DCF practices, to avoid punitive measures in the future and demonstrate leadership in sustainable practices.



## Spotlight: Leather vs Leather Alternatives

Many companies, particularly in the auto and fashion industries, are touting “vegan” leather and have increased their use of leather alternatives, in part due to perceptions related to leather having negative animal welfare and environmental impacts. Often missing from this narrative is that most leather alternatives are made using plastic, which is created from fossil fuels, does not biodegrade, and has littered oceans and soils with debris and microplastics, causing tremendous damage to biodiversity. Tesla, for example, has stopped using leather interiors, yet is promoting fossil fuel reduction from its electric vehicles, which does not consider the impact of fossil fuels in its leather alternative interiors.

Plastic, like all other materials, is not necessarily good or bad; it is how the material is sourced, and managed at end of life, that determines its overall impact. If plastic-based leather used for a car interior is biobased and responsibly sourced (see footnote

for WWF’s Biobased and Biodegradable Plastic Position) and for which there is an effective, end of life management process in place (ideally, recycled), it might be a strong choice in terms of total impact. Additionally, some companies are exploring leather alternatives that are not plastic based, but such alternatives are nascent.<sup>9</sup>

While leather costs more up-front, it can provide savings in the long run depending on its use due to its durable nature and ability to be further upcycled. It can last many years, depending on initial quality, type of use, and how well it is maintained. Additionally, leather can be recycled and reused; for example, leather initially used for car or airplane interiors can later be recycled for use in bags. In comparison, many leather alternatives made of plastic typically do not last as long as leather and are less likely to be recyclable relative to plastic used in other applications, leading to more waste.<sup>10</sup>

## TAKING ACTION

Companies that purchase leather bear responsibility for influencing more sustainable leather production. The most critical action that companies with a leather footprint can take is to commit to DCF production and invest in their supply chain to meet those commitments. Leather sourced from areas with high deforestation and conversion rates can easily have double the GHG footprint than without. But cattle raised far from

deforestation frontiers can have high deforestation related footprints from their feed; each 10% addition of deforestation-contaminated soy to the diet increases the total GHG footprint for cattle by about 25%. The Science Based Targets Initiative Forestry, Land, and Agriculture (SBTi FLAG) sectoral decarbonization approach has a new pathway for leather. This pathway specifies regional GHG intensities for raw hide over time

that are consistent with a 1.5C climate future. From FLAG modeling, leather's GHG impact without deforestation is 2.7-15 kgCO<sub>2</sub>e/kg hide (raw).<sup>11</sup> Places like the US with efficient beef production will be on the lower end, whereas South and Southeast Asia are on the higher end. With deforestation, GHG emissions range from 3.4 - 24 kgCO<sub>2</sub>e/kg hide at a regional level. At a regional scale, land use change (LUC) emissions can be over 75% of the hide's total footprint, with countries such as Indonesia and Brazil having considerable LUC footprints for hides in their model. These FLAG targets are not achievable without urgent action to eliminate deforestation and conversion from cattle production.

Additionally, traditional tanning process uses harsh chemicals that stay in the environment and have the potential to pollute waterways if improperly disposed of. Some alternative tanning processes to reduce and eliminate the use of such chemicals are already occurring, and the Leather Working Group (LWG) has a "Tannery of the Future" audit program that assesses tannery environmental and social performance.

Industry-led groups such as the LWG provide another avenue for leather purchasing companies to make progress towards sustainability goals. The LWG is working to map the leather supply chain to eliminate deforestation and conversion and is exploring how the leather industry as a whole can collaborate with the beef industry to make progress on this critical issue. Additionally, the LWG is in the process of conducting an extensive lifecycle assessment (LCA) for the leather industry. This will form part of their updated protocol for auditing the leather industry, which will include greater regulation on traceability direct to the farm.

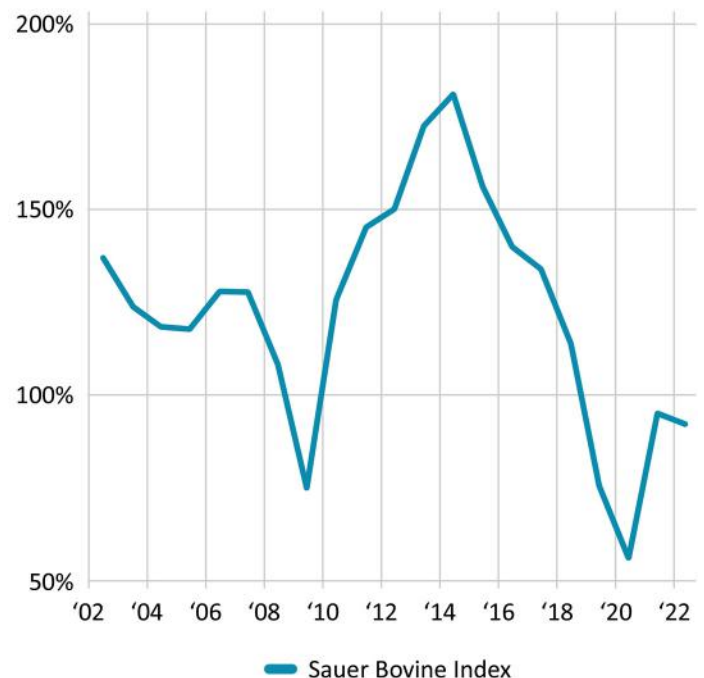
Leather purchasing companies should participate in industry groups such as the LWG to share information and best practices so that the entire industry may progress towards more sustainable

practices more quickly. Working to ensure traceability within supply chains, establishing recycling programs, and working across supply chains to embed sustainable practices throughout are also vital steps companies can take towards increasing sustainability.

Equivalent to around 3 million hides, from trimmings and splits of hides, a month are used for gelatin. Figure 3, provided by The Sauer Report, demonstrates that hide prices have dropped considerably after a peak around 2015 and have not recovered. This puts more pressure on producers as profits are lower from a lower value byproduct and increases opportunities for the gelatin industry.

Four European gelatin companies can absorb a significant amount (~35%) of hides from Brazil. While these companies also have DCF exposure, they are not in the spotlight as leather and beef companies are, but they need to be included in the whole supply chain solutions in order to eliminate deforestation and conversion.

**Figure 3: 20 years' index of bovine hide prices**





## Traceability in Action: Minerva Foods

Minerva Foods is one of the largest meatpackers in the world. It processes nearly 30k heads of cattle/day across South America. Due to its presence at the forefront of key deforestation and conversion hotspots, particularly in Brazil, Paraguay, Argentina, and Colombia, traceability is a critical tool it is using to meet its environmental goals. Minerva Foods' target is to have full monitoring of direct and indirect supplying farms by 2030, in all countries of operation.

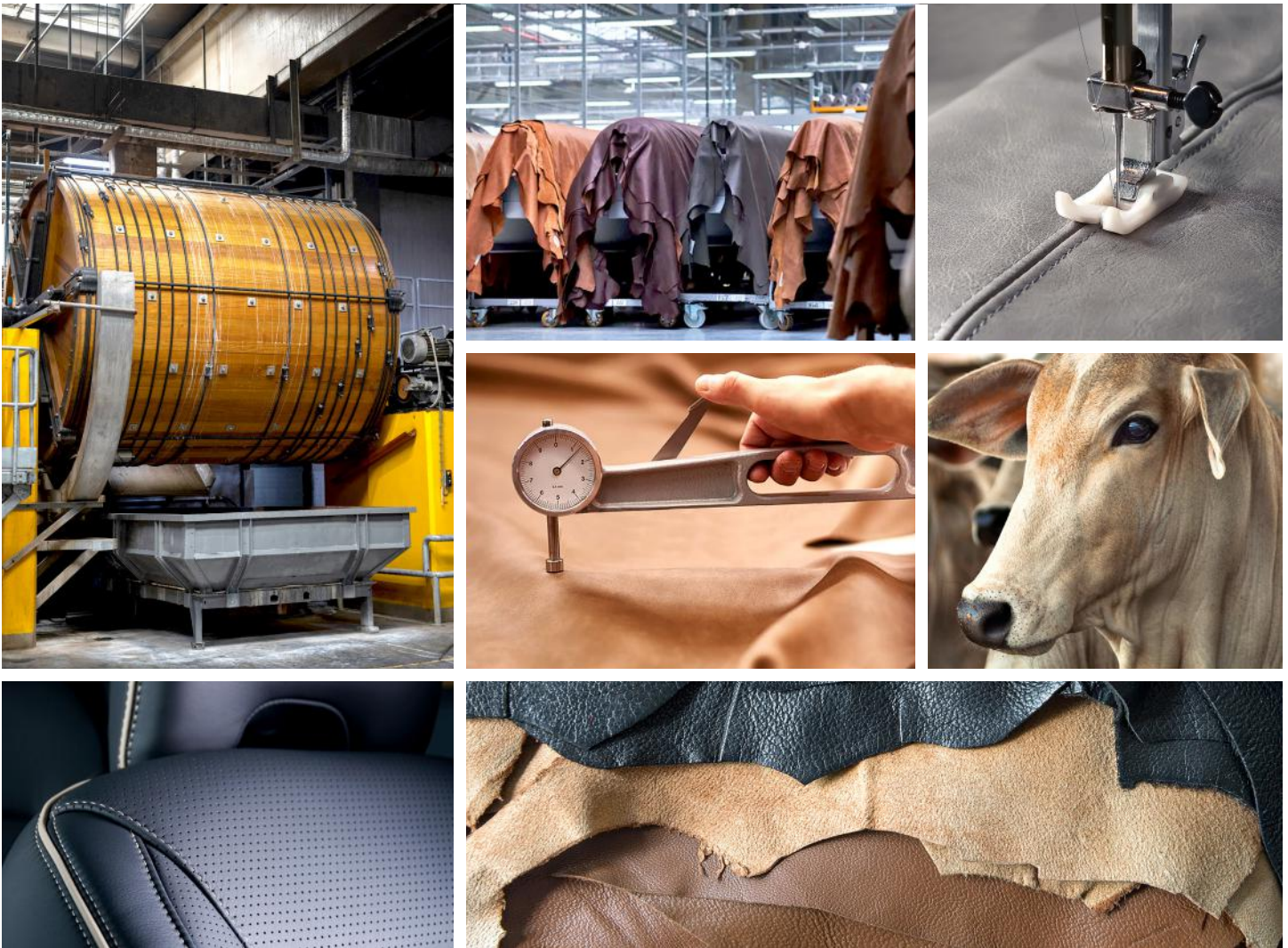
Cattle purchasing can be complex and difficult to trace. It requires investment in tools and technology as well as engagement of the entire value chain to ensure complete traceability. While some producers control the full lifecycle of cattle from birth up until slaughter, in many cases, cattle change hands numerous times throughout breeding, rearing, fattening, and finally slaughter. Even with strict laws against deforestation in Brazil, illegality is still an issue, where cattle may be raised on deforested pasture and then sold to a producer who does not have illegally deforested land to mask the origin of the cattle. Sometimes these sales may happen numerous times to make it more difficult to find deforestation at the origin. The biggest hurdle in overcoming this challenge is due to the lack of access to or even the existence of official data for verification at various parts of the value chain.

With more than 15k cattle suppliers, tracing its fully supply chain is no small undertaking for Minerva.

It is able to trace and verify that its direct suppliers are all deforestation-conversion free. To reach the more difficult indirect suppliers, the company integrated Visipec, a traceability and monitoring tool for indirect suppliers in the Amazon, into its internal systems. The tool cross-references information from a property's Rural Environmental Registry with public databases to track cattle movements during their production cycle. Early trials indicated more than 99% compliance with the good practice criteria defined by the Indirect Suppliers Working Group.

While Visipec enables looking back at what happened with suppliers in the past, to proactively reach indirect suppliers before purchases are made, Minerva is also using SMGeo Prospec. This app enables rural producers throughout Brazil to verify compliance within their own supply chains. Minerva is training direct suppliers to use the app, while offering financial incentives, to input identifying data regarding indirect suppliers and work towards full traceability. Training producers on the app, and eventually tracing back through multiple layers of indirect suppliers, represents a challenge, but Minerva is making strong progress. While more work remains to be done to fully trace their supply chain, Minerva hopes that by sharing their progress, others can learn from their experience and drive forward change more quickly.





## CONCLUSION

Leather is an important byproduct of cattle production with a rich history. Its durability and position as a luxury good make it a desirable material across a variety of industries. Rising beef consumption globally means hides will continue to exist in the market and if they are not used for leather, they often go to waste, creating methane while sitting in a landfill.

The leather industry has the opportunity to step up and bolster efforts to eliminate deforestation and conversion in the beef supply chain due to the added income provided by hide sales to producers.

By collaborating with the beef industry on DCF efforts, leather purchasing companies can use their leverage to drive change and accelerate protection of at-risk habitats.

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## CITATIONS/FOOTNOTES

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- 1 [https://onlinelibrary.wiley.com/doi/pdf/10.1093/ajae/aaz034?saml\\_referrer](https://onlinelibrary.wiley.com/doi/pdf/10.1093/ajae/aaz034?saml_referrer)
- 2 This paper does not seek to opine on veganism or what constitutes appropriate product consumption for vegans, but rather seeks to outline that leather alternatives should be considered for their full impacts relative to leather.
- 3 <https://www.abiec.com.br/publicacoes/beef-report-2022/>
- 4 <https://forest500.org/analysis/insights/commodity-series-no-more-hiding-leather-industry>
- 5 <https://ourworldindata.org/meat-production#number-of-animals-slaughtered>
- 6 17% waste is a rough estimate based on data provided by the Leather and Hide Council of America.
- 7 <https://www.nytimes.com/2021/11/17/climate/leather-seats-cars-rainforest.html>
- 8 <https://www.wwf.eu/?5179866/EU-deforestation-law-proposal-Off-to-a-strong-start-but-loopholes-must-be-closed>
- 9 <https://www.worldwildlife.org/publications/wwf-position-biobased-and-biodegradable-plastic>
- 10 <https://www.theguardian.com/sustainable-business/southwest-airlines-upcycle-leather-seats-aeroplane-bags-shoes-balls>, <http://koreabizwire.com/social-enterprise-upcycles-leather-from-car-seats-into-quality-bags/118282>
- 11 These estimates are for hides from beef cattle. Dairy hides would be expected to be lower.