

Report summary  
for the fashion industry



**Beyond Leather**

A just  
transition

# Introduction

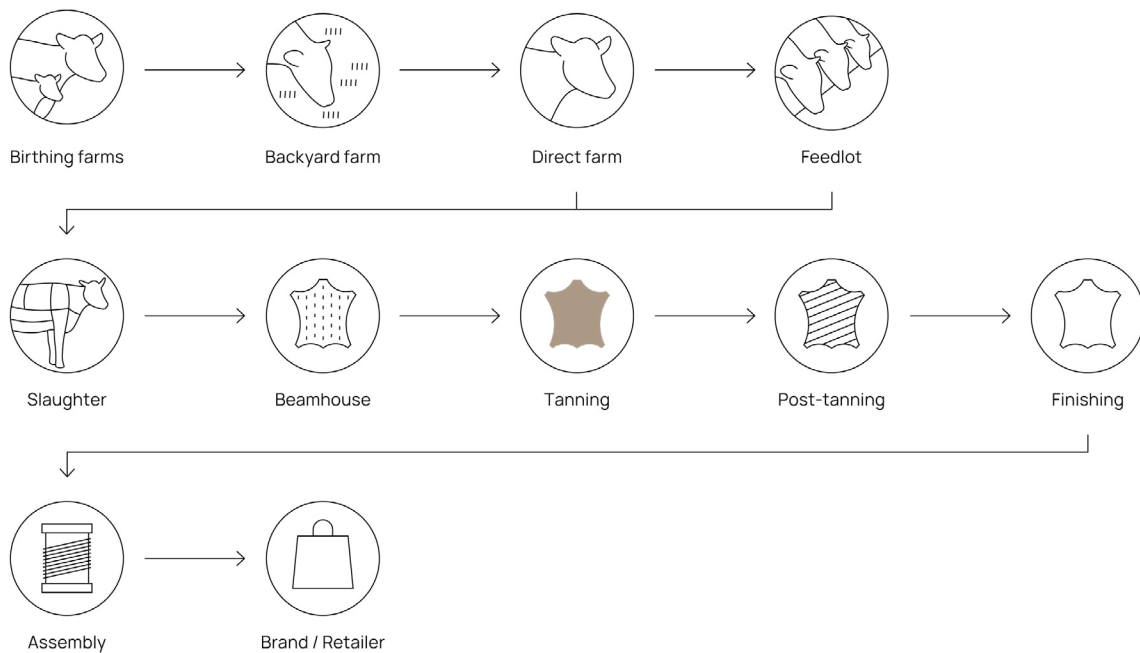
The interlinked harms leather production causes to people, our fellow animals and the planet are immense. Leather products are derived from supply chains that are inherently inefficient, biodiversity-destructive, land intensive and climate impactful. This is a system designed to commodify and kill animals, all the while polluting communities as well as mentally and physically harming many people within and surrounding it. While this system can be marginally improved, it is incapable of transforming into one that is genuinely responsible. Fortunately, there is a path forward: one that supports people, our fellow animals and the planet alike.

As consumer perceptions shift and support for leather production further wanes, we have an opportunity to create something better. A 'just transition' beyond leather is a global move to next-gen, total ethics materials which replicate or exceed leather's performance and aesthetic qualities, but not the harms caused by its production.

In this transition, fossil fuel derivatives are also phased out, and the farm, slaughterhouse and tannery workers in leather supply chains are not left behind. Instead, these working people are supported in a move to more communally beneficial work. While a just transition is expensive, significant existing subsidies and global financing of the leather industry can be redirected to supporting this much needed transition, which benefits us all.

The future of 'leather' is one to look forward to, and work urgently, diligently and creatively towards.

# Supply chain overview



## Leather is not a by-product

Despite common misconception, leather is not simply a worthless by-product, but a co-product. While the leather industry likes to claim skins are tanned as a kind of waste reduction initiative, thus supposedly making leather neither cruel nor unsustainable, this is not the case. Leather is a valuable co-product, with even meat and dairy industries labelling it as such. The leather industry itself states the massive income losses involved in losing skin sales. As such, the purchasing of leather helps to fund harms across the entire supply chain. This is critical to understand in order to support a just transition beyond current leather production.



# Shifting perceptions on leather

While leather continues to be widespread in fashion, and marketing ties the material to ideas of quality, craftsmanship and sustainability, a growing number of people around the world are seeking genuinely responsible alternatives.

- Year-on-year from 2020, searches for 'leather' have decreased by 3.5%, while searches for 'vegan leather' have increased by 69%, with 'eco vegan leather' searches also on the increase.
- 2021 polling across twelve countries found that almost 90% of shoppers want companies to make animal, environmental and social protections alike key priorities, with almost one third of people now seeking out products which reflect this or which are totally free from all animal derivatives.
- New Collective Fashion Justice commissioned polling found that 75% of Australians and nearly 78% of people in the UK would prefer to choose animal-free leather if it were sustainable and readily available.
- Similarly, Material Innovation Initiative found that 90% of consumers surveyed across China preferred next-gen leather which is more sustainable and animal-friendly than conventional leather.



# Fashion and the future of leather

Existing data highlights the significant environmental and other benefits of next-gen as opposed to animal-based and fossil fuel-derived leather materials. As a result, significant funding is being invested into next-gen leather development, with an estimated \$2.2 billion USD global wholesale market for next-gen materials due in 2026.

Over 65 companies are working to produce next-gen leather today. In descending order, input categories including plant-derived, microbe-derived, mycelium, blended, cultivated animal cells, and recycled materials are used. For these materials to effectively take the place of current-gen animal-derived and wholly synthetic leather, they must be durable, strong, stable, and colour fast. To environmentally out-perform these materials, innovative materials should also consider end-of-life impacts and circularity.

With an extensive but non-exhaustive list of next-gen leather materials provided in our full report, some significant producers can be highlighted here:

- Natural Fiber Welding, producing MIRUM® from nutrients in agricultural waste streams, completely free from plastic. Biodegradable and recyclable into new material, this next-gen leather is already available and scalable.
- Ohoskin, made from a blend of recycled materials, cactus and orange waste from the food and cosmetic industries. The material is durable, scalable and capable of being recycled at the end of its usable life.
- Leap™ from Beyond Leather is an 84% bio-based material, being further developed towards total bio-inputs. Life cycle assessment suggests the material uses 99% less water and releases 85% less emissions than conventional leather.
- Sqim's EPHEA™ material was launched with Balenciaga, made with fermentation-based mycelium that's finished with green chemistry tanning. It's consistently reproducible and requires minimal land, water and emissions release to produce.



# Funding a just transition

**For a just transition beyond leather to be realistic, it must be highly-funded. Retraining of working people, the setup and development of new supply chains and systems, rewilding: all of these required steps require financing. Fortunately, there are several streams of funding from harmful industries which could be diverted to support this just transition.**

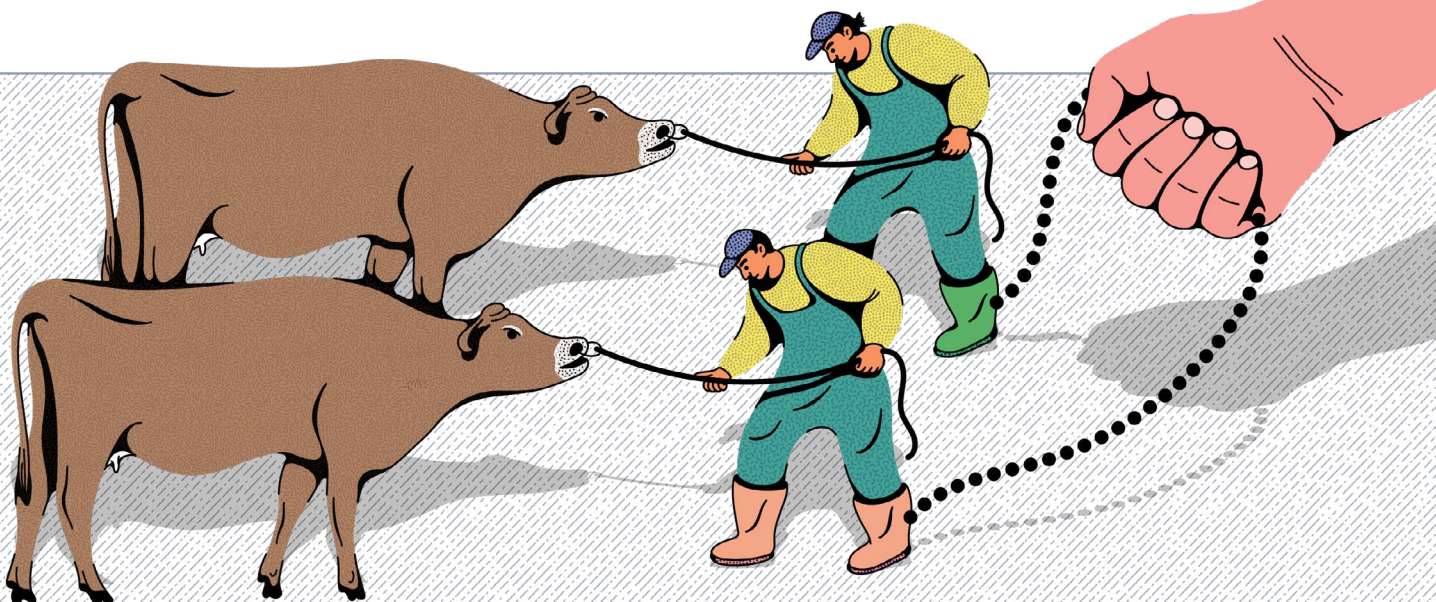
- According to the United Nations, 90% of global farm subsidies fund 'harmful' operations, with the largest sources of emissions, such as cattle ranching, also receiving the biggest subsidies. Government subsidies for animal agriculture are 'price-distorting and largely harmful to the environment', according to the UN's FAO, and render Paris Agreement climate targets unreachable. Up to \$6 trillion USD worth of damage has been caused to nature through such subsidy regimes.
  - Big banks around the world also fund the leather supply chain. Changing Markets Foundation reports that 40 major financial institutions heavily fund cattle industries, disproportionately contributing to the climate crisis through their fiscal support of methane-emitting production. These institutions share a combined investment of over \$115 billion USD in equities within these supply chains.
  - Across the top ten cow skin production countries, public funds of over \$9 billion USD were paid to ruminant animal rearing industries producing meat and leather in 2014, when data was most recently available. This Collective Fashion Justice analysis of subsidy data also found that subsidies inflated to \$15.1 billion USD when dairy industries producing calf skins were included.
- Not only must public funds be shifted away from industries producing leather and other ruminant animal products, these industries could also be taxed, as has been done for coal-powered energy in Britain, for example, and as some researchers consider inevitable. This would force industries to not only pay their own production costs, but to be responsible for the cost of its harms on the planet, our fellow animals, and people, too.



## Transitioning farmlands and workers

As the cattle industry as a whole becomes less profitable, farmers continue to see smaller margins returning to them when animals are sold to slaughter. As the market share for non-animal products, including materials, rises, these margins are only going to reduce further, making already difficult and unsustainable work economically unviable.

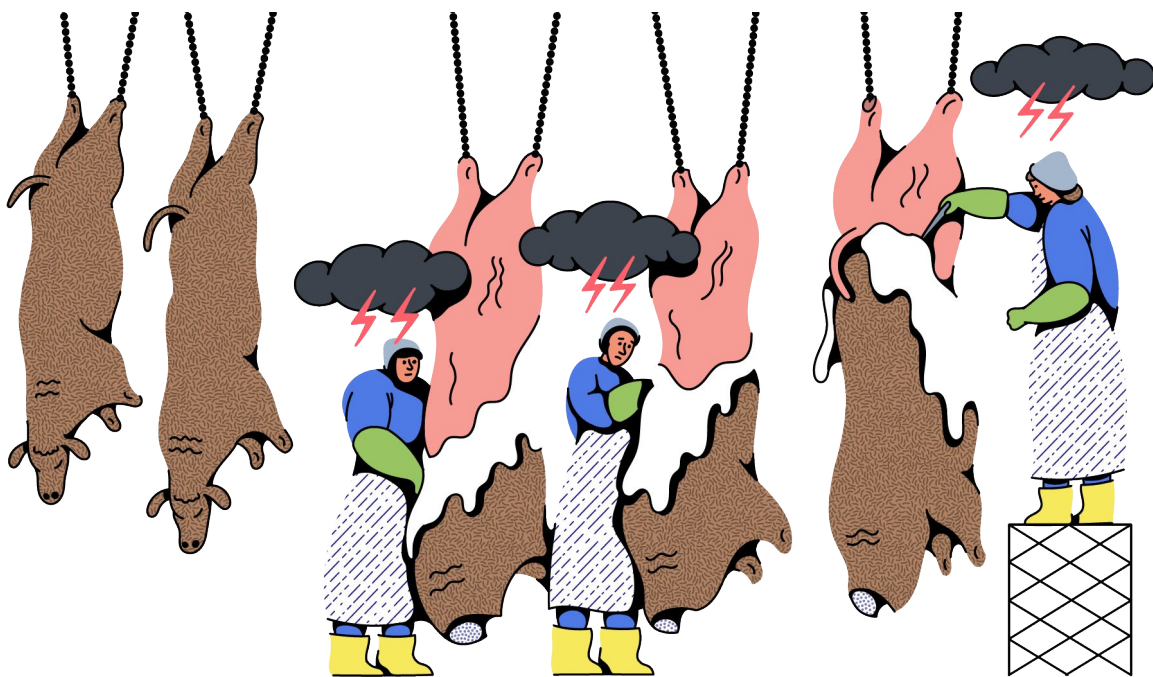
- In Scotland, 64% of surveyed farmers said they would consider transitioning out of animal rearing entirely, if financial support was provided to them. 86% said they would consider changing their farming practices to mitigate their climate impact, and to align with changing consumer preferences. While further global surveying is required, farmers around the world have shared similar concerns about their current work, precarious economic position, as well as interest in a plant-based transition.
- Research shows that plant-based transitions can transform agricultural systems to be more equitable for farmers and rural workers, also reducing health risks. A number of practical agricultural transition opportunities help to provide feedstock to the next-gen leather market, while also providing healthy food and reducing agricultural waste.
- Indigenous communities whose land is threatened by cattle ranching in leather supply chains can play a part in this transition, as has occurred in the Amazon, thanks to Amazkin, which works with First Nations people to produce plastic-free leather alternatives through traditional methods, while conserving the land.
- The International Labor Organization notes that tripling investment in nature-based solutions by 2030 can generate an estimated additional 20 million jobs. Eco-tourism and land regeneration are beneficial paths forward in a just transition beyond ruminant animal rearing, which would free up 3 billion hectares of land for biodiversity support, as well as human enjoyment. This would also support the returning of stolen Indigenous land, while benefiting mental and physical health through nature-exposure. In turn, this could reduce economic strain caused by current ill-health.



## Shifting beyond slaughterhouse work

Many experts agree that, with retraining support, slaughterhouse workers could be shifted into employment in systems creating alternatives to previously animal-derived products.

- Such alternatives could include plant-based and cultivated meats which offer improved environmental, health and ethical outcomes, and roles in agricultural production which exist as part of the food and fashion system. Roles within carbon farming, eco-tourism, and other nature based solution work could also be available.
- A just transition should not limit people currently working in harmful systems to move into systems which exist as a direct alternative path forward. Some projects already exist to offer retraining and support in work transition for people in slaughterhouses, and in Australia, one political party already has policies to develop and support such just employment transition.
- Given the significant rate of trauma and mental illness which can be caused by the job, a just transition beyond slaughterhouse work should also support the mental health of those leaving it. While this support will require investment, the likely reduced rates of mental ill health, violent crime and physical health impacts surrounding slaughterhouses may be reflected in reduced need for public funds to address these.
- Not all costs would or should be shouldered by public funding, particularly as major companies which own slaughterhouses and tanneries alike invest in the development of alternative supply chains which create products free from animals.





## Reimagining and moving beyond tannery work

Across the ten most significant tanned leather exporting countries, more than an estimated 541,000 people work in tanneries.

The ILO states that ‘changes in technology as well as in the knowledge and practice of employees can play a pivotal role’ in transforming the currently polluting tannery industry. This change is needed in the global industry, and can support green chemistry tanning of next-gen leather.

- Next-gen material producers are already partnering with sustainable tanneries to improve fashion’s sustainability. Squim, MycoWorks, Ecovative and Bolt Threads all have partnerships with leading, more responsible tanneries, helping them to produce their mycelium-based materials which can replace skin-based leather.
- As next-gen materials requiring tanning scale up, their growth could act as an opportunity to provide new technology and training, as well as improved worker health and safety to tanneries currently operating in an unjust and polluting manner. These transferable skills make a just transition more simple at this stage of the supply chain.
- As not all next-gen leather production involves tanning, the industry will reduce in scale, requiring alternative, communally beneficial opportunities for many current tannery workers. While a number of Asian countries are currently major tannery production areas, they are also hotspots for nature based solution roles, highlighting an opportunity for further transition.
- Atma Leather is developing bio-based leather from otherwise discarded banana plant fibres in India, with the intention of providing an alternate material supply chain in order to reduce pollution from tanneries in the country. This kind of localised, socially supportive and more responsible innovation must be supported.



## Recommendations for the fashion industry:

- **Brands and fashion-related publications should avoid green-washing leather goods** by refraining from the use of terms like 'responsible', 'natural', 'sustainable' and 'eco-friendly' when referring to them.
- **Fashion brands should publicly commit to reducing leather use by at least 50% by 2027, fully phasing out leather no later than 2035.** These timelines should be used as conservative targets for brands not built primarily on leather sales, with more immediate change being both critically needed and achievable for many brands. Degrowth should be included in this strategy in order for it to be possible.
- **In phasing out animal-derived leather,** brands should embrace alternatives that shift the fashion industry away from a reliance on fossil fuels, and towards greater circularity. The list of next-gen materials provided in our full report should be used to guide this move, with both organisations attached to the report available to assist brands.
- **Large fashion brands should invest in the research and development of leather alternative material innovation** – ensuring these materials consider the need for a just transition, and will ultimately be open-source and available for wider industry use.
- **Communications of work to reduce some environmental harms associated with animal-derived leather production** while phase-out periods progress should be specific and clear that they cannot render leather a more sustainable choice than next-gen, animal-free leather.



Full leather report  
Under their skin:  
A just transition beyond leather

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Leather's impact on people  
Leather's impact on the planet  
Leather's impact on animals

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