

Supply chains should make the world better, not worse—it's time for a rethink, say researchers

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Every product or service that you consume is part of a supply chain. Supply chains include an array of activities connecting mining or harvesting, processing, manufacturing, logistics, marketing, retail, consumption, and waste management. Even quite simple products or

services can have complex supply chains that span the globe.

Each of these activities along the supply chain will have an impact, socially and environmentally. Some are positive, such as job creation and training opportunities. Others are negative, such as [deforestation](#) to expand rangelands for meat production.

For years, large companies and brands have come under increasing pressure from governments, NGOs and consumers to address social and environmental concerns in their supply chains. For instance, food companies like Unilever have faced criticism for deforestation caused by growing [palm oil plantations](#), or for the depletion of [fish stocks](#).

Some large companies have responded by integrating social and environmental conditions into their supplier contracts. They have also supported multi-stakeholder initiatives like the [Marine Stewardship Council](#) that try to involve or influence [diverse actors](#) in different parts of the supply chain.

There have thus been a range of efforts to make supply chains more sustainable. This has generally been [interpreted](#) as maintaining "economic viability, while doing no harm to social or environmental systems."

Doing no harm is clearly important. But, as a group of scholars from around the globe, we argue that the worsening state of the world's social and ecological systems requires a new approach to supply chain sustainability. We explain this in a recently published [editorial](#).

Earth system scientists identify nine planetary boundaries, beyond which the life support systems of humans might be irreparably disrupted. Six of them have already been [breached](#).

In that context, we need to go beyond minimizing harm to [proactively regenerating](#) social and ecological systems. In other words, supply chains should be designed and managed so that communities and ecosystems are strengthened by supply chain activities.

Questioning assumptions

To make the shift to regenerative supply chains, we need to reconsider important assumptions that have shaped the practice of supply chain management. That is because these assumptions have played an important role in making supply chains damaging to communities and ecosystems, rather than regenerative.

The first assumption is that a company should manage its supply chain purely to maximize profit. This commonly leads to an emphasis on economies of scale, as is evident for example in large monocropping plantations, such as those for palm oil. Such efficiency-focused production systems displace [natural ecosystems](#), are devoid of biodiversity, and exacerbate climate change. They are also fertile ground for human rights abuses and worsening [social inequality](#).

Another assumption that deserves questioning is that the only way to drive sustainability in supply chains is through large focal firms imposing standards on suppliers. This leads to a reliance on companies like Unilever establishing new rules for suppliers in the supply chains for products like fish or palm oil, mentioned above.

But research [shows](#) the limitations of such efforts, especially given the common emphasis on cost-cutting by such focal firms. Large focal firms also [often lack](#) the necessary knowledge of local contexts. They may even do harm when imposing ostensible sustainability standards.

Principles for regenerative supply chains

We have limited knowledge, as yet, about what truly regenerative supply chains look like and how they are created and maintained. But there are some inspiring examples, which give us an initial sense of some likely [helpful principles](#).

The principle of proportionality emphasizes the need to adjust the scale and scope of supply chain activities [to align with natural and social thresholds](#). This may include interventions to return systems to a more balanced state.

For example, [Inversa](#) markets leather products made from the harvesting of invasive species that disrupt ecosystems, such as non-native pythons in the Florida Everglades or lionfish in the Caribbean. By creating a market for such harmful species, a new supply chain is created that makes important contributions to protecting ecosystems, while generating economic opportunities for local communities.

In another example, [Reyneke Wines](#) are made from vineyards on farms where significant stretches of land are dedicated to indigenous vegetation. This not only contributes to biodiversity conservation. It also ensures there are beneficial insects around that keep pests at bay. Cultivation is thus kept within limits to allow space for natural systems.

A second principle is [poly-rhythmicity](#). This recognizes that communities and ecosystems have diverse rhythms that need to be identified and respected. For instance, managers at Reyneke Wines consider diverse meteorological, biological and nutrient cycles to schedule planting, harvesting, and so on.

This applies to households, communities, and other social systems, too. Managers need to recognize that they cannot expect local communities to

align with their corporate project schedules. For example, in the case of Anglo Platinum's Mogalakwena mine in South Africa, the pressure to implement a community resettlement quickly was one of the reasons that some households [refused to move](#). This led to growing grievances and conflict, as well as operational disruptions with broader supply chain implications.

A third principle is reciprocity, which speaks to the interdependence between supply chains, workers and communities, and the need for mutual benefit. For instance, in Inversa's supply chain, local people are involved in the hunting of alien species and the sale of meat also contributes to local economies. At Reyneke Wines, employees are supported through, among other things, home-ownership schemes linked to specific wine labels. Such support to employees, small-scale producers and [local communities](#) strengthens these stakeholders' ongoing contributions to making the supply chain more resilient.

Collaboration and coordination

Responding to these principles will likely create new challenges and opportunities for supply chain managers. This includes new ways of coordinating supply chain activities. Rather than relying on the standard top-down approach, a more collaborative engagement with suppliers may be helpful.

For example, [Natura](#) is a company that committed itself to regenerative sourcing of "biodiversity inputs," such as nuts, fruits and natural ingredients used in its cosmetics products. It established an inclusive, shared approach to managing relations with a multitude of small, family-owned farms organized in cooperatives. By paying better prices to these producers, this supply chain has also [fostered enhanced forest conservation](#).

In sum, we argue that we need a shift in sustainable [supply chain](#) management to go beyond minimizing harm to proactively regenerating social and [ecological systems](#). There are some inspiring examples of such efforts, as well as emerging principles to guide managers. But more research should help to show how to make regeneration the norm rather than the exception.

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