



Life Cycle Assessments

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LCA AND SUPPLY CHAIN TRACEABILITY

Life Cycle Assessment (LCA) is a structured way to quantify environmental impacts across the full life cycle of a product or service. It's about understanding the true environmental performance behind something – from the extraction of raw materials, impacts from production and processing, packaging and transporting across the supply chain, and waste and recycling management at the end.

While LCA has its roots in industrial manufacturing, it is now widely used across agriculture and food systems. When we hear about comparisons between the environmental performance of different types of protein or crops – e.g. almond versus oat milk – the results are usually underpinned by LCA in some form.

Why carry out an LCA?

LCAs answer specific questions. Often those questions relate to where environmental impacts are coming from, what changes might make a difference, and whether there is a solid evidence base behind what is being communicated to customers and other stakeholders.

One of the more useful aspects of LCA is that it takes a full supply chain view. Once everything is mapped out, it's clear whether a significant share of environmental impact sits outside direct operations, particularly upstream in inputs and suppliers.

This is usually where the value of the analysis starts to show. It gives a clear sense of where to prioritise efforts, rather than trying to improve everything at once.

At the same time, there are limits to be aware of. LCA is only a model of a real system, built using the data available. In complex supply chains, that often means combining measured data with industry averages or proxies. The outputs are still useful, but they need to be interpreted in the context of being a mix of actual and proxy data.

This is where traceability adds real value. Linking inputs and processes back to where they come from helps strengthen the data that sits behind the life cycle analysis. With greater traceability, it's easier to connect impacts back to specific suppliers, regions or production systems, rather than treating them as one blended average.

Putting the two together makes things more practical. LCA highlights where the environmental impacts sit and what's driving them. When combined with traceability, this gives a clearer basis for deciding where to focus effort – whether that is changing inputs, working with specific suppliers, or adjusting how something is produced or moved through the system.

This becomes more important when results are shared externally. As expectations increase around reporting claims, and also understanding supply chain ethics and risks, the question is not just “what is the footprint?”. It is also “how do you know?”. Traceability helps answer that question.



For most organisations, the starting point is not a full, detailed LCA straight away. It usually starts with identifying what they are trying to understand or communicate, and what information already exists. In many cases, some of the required data is captured in existing reporting within different business units. The value comes from linking it together in a way that is useful.

If you want to understand the environmental performance of your agricultural value chain, where you should focus your investment to make the most improvement (this is the ‘best bang for your buck’ thing), or where an LCA approach might support in reporting your environmental credentials, we can help clarify what the next step could look like.

Contact Ray Mohan for more information

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