

ENVIRONMENTAL FOOTPRINTING

CONSIDERING THE THREE PILLARS OF SUSTAINABILITY



As the term “sustainability” is so often associated with the environment, many sustainability assessments have focused primarily on environmental considerations. However, the concept of sustainability is multi-faceted and includes social and economic factors as well. As such, sustainability metrics have been evolving to incorporate all three pillars of sustainability: environment, social and economic.

Environmental Footprinting (EF) is a method for measuring the environmental impact of a product or process. The EF method considers a variety of environmental metrics such as energy, water, greenhouse gases, land use, and more. A more specific tool available for conducting an EF is Life Cycle Assessment (LCA). LCA is a systematic, quantitative assessment used across many industries to gauge environmental performance. It is a comprehensive tool that accounts for all of the inputs (energy, raw materials, etc.) and emissions used in the production, use and disposal of a product and its impact on the environment.

Environmental Footprinting started mainly with carbon assessment, and has grown to consider other environmental metrics. Traditional footprinting and LCA methodologies, such as the globally recognized International Standards Organization (ISO) LCA standards, focus solely on environmental indicators, excluding direct socio-economic considerations. This gap in standardization is primarily due to the lack of universal applicability for socio-economic indicators. Although environmental conditions can vary greatly in different circumstances, international standards have been able to harmonize a set of general environmental indicators that have relevance across a variety of products, industries and landscapes. However, socio-economic considerations can be much more subjective as economic and social policies and conditions are influenced by an array of factors such as government, culture, and markets. This makes regional or universal standardization of socio-economic indicators difficult to develop.

Nonetheless, as societal values have shifted and contemporary ideals stress the importance of three-pillared sustainability, footprinting initiatives are continuously looking to incorporate social and economic impacts into their assessments. Progress is being made in this area as numerous retailers and other organizations have been successful at incorporating environmental, social and economic impacts into their sustainability metrics. Additionally, socio-economic standardization efforts are being developed to help footprinting and LCA initiatives in being more comprehensive.

One company that is striving to comprehensively analyse the sustainability of its operations is McDonald'sⁱ. This company divides its sustainability initiative into five areas: nutrition and well-being, sustainable supply chain (including sustainable beef and fisheries), environmental responsibility, employee experience and community. By separating its sustainability goals, McDonald's is able to ensure all three pillars of sustainability are covered in a way that best suits the company.

McDonalds has also completed a case study to demonstrate that its beef can be produced economically, ethically and in consideration of the environment. Through the use of its "Good Practice Matrix", McDonald's highlights economic, ethical and environmental practices of its agricultural suppliers, throughout the supply chain. Good practices are emphasized at each step of the process (management, inputs and outputs, operations, and resources), with the associated economic, ethical and environmental benefits described. Some of these benefits include compliance with environmental legislation, preventative healthcare for animals and cost savings from captured rainwater.

The Dairy Farmers of Canadaⁱⁱ (DFC) has undertaken a LCA to determine the environmental and socio-economic impacts of Canadian milk production. One of the primary drivers for this study is changing consumer expectations, as consumers are looking for sustainable products in today's market. The study is primarily following the guidelines set out by the International Dairy Federation. However, as these guidelines do not include a socio-economic component, DFC has worked to adapt its approach so that it can include a Social Life Cycle Assessment in its research. Some of the socio-economic indicators they consider include human rights, working conditions, health and safety, and cultural heritage. DFC aims to establish a benchmark for socio-economic performance of Canadian milk production. This Canadian initiative is the first in the world to incorporate both environmental and socio-economic analyses into a milk production LCA.

BASFⁱⁱⁱ, a leading global agricultural chemical company, identifies its sustainability values as economic success, social responsibility and environmental protection. This three-pillared vision has led to the company's AgBalanceTM tool, which applies a methodology of agricultural specific indicators to determine the sustainability impact of the agriculture sector in terms of its life cycle. BASF's methodology includes indicators from each focus area: environmental, economic and social. Some of the environmental indicators include energy use, air emissions and eco-toxicity. Economic indicators cover a range of cost metrics such as labor, transportation and machinery, as well as a macro-economic indicator. Finally, the social indicators are grouped into stakeholder categories, such as international stakeholders or consumer stakeholders. There are a wide variety of social indicators, including work accidents, human toxicity, gender equality and family support.

Although no formal standardization has been created for socio-economic indicators, the United Nations Environment Program (UNEP) and the Society for Environmental Toxicology and Chemistry (SETAC) Life Cycle Initiative^{iv} has developed a task force to analyse how to better integrate social and economic considerations into the LCA methodology. It is unlikely that a concrete socio-economic standardization will be developed anytime soon, just as the harmonized environmental indicators are not set in stone. Footprinting is an ever-changing field and each initiative needs to be tailored to achieve specific objectives. Social and economic considerations are particularly susceptible to this subjectivity, which may be more of an opportunity than a constraint as footprinting methodology can be adapted to more accurately reflect each situation.

As social values continue to gain acceptance and emphasize the importance of sustainable production, the need for transparent sustainability assessments will

increase. The environmental aspect of sustainability has been a major focus in this societal shift, but more and more attention is turning to the socio-economic impacts of production. Although the standard footprinting methodologies do not include these considerations to date, retailers and other organizations are beginning to recognize the need for socio-economic indicators in footprinting and LCA research. The field is advancing and the opportunities for comprehensive, sustainability assessments that consider the environmental, economic and social consequences of production are becoming more prevalent.

ⁱwww.mcdonalds.com/us/en/our_story/values_in_action/the_road_to_sustainability.html

ⁱⁱwww.dairyfarmers.ca

ⁱⁱⁱwww.basf.com/group/corporate/en/

^{iv}www.estis.net/sites/lcaplus/

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