



IDF common approach to carbon foot printing in the dairy value chain using a lifecycle assessment approach



Background and need for this methodology

The IDF common methodology for lifecycle assessment (LCA) of dairy production and processing was first published in 2010. The guide is designed to assist the dairy industry with its journey to reduce GHG emissions across the value chain. To play its part in mitigating climate impacting gases, the sector invested considerable effort in trying to better understand the science behind the impact the livestock sector has, and how this can be addressed. Instead, the IDF community found itself investing more time comparing methodological approaches as opposed to implementing focused mitigation actions. As a result, the IDF took the bold step of developing a common approach to quantifying GHG emissions. This enabled the dairy community not only to 'speak the same language', but to also focus on the critical task of mitigation.

The current methodology is, to a large extent, aligned with other guidance in this topic area, IPCC, ISO, FAO LEAP, FAO GLEAM with many other LCA initiatives embedding the IDF approach into their respective tools. The Action Team continues to interact with these and other initiatives such as the EU PEF, to achieve or maintain the desired alignment where possible.

Since 2010, the methodology has undergone one revision in 2015. The IDF is acknowledging developments in both science and application techniques of lifecycle assessment and is pursuing a more forensic review and update. This process will ensure that the IDF guide is fit for the future and that the dairy sector continues to be at the forefront of LCA knowledge.

The importance of an appropriate and consistent approach

What a difference a methodology can make

There are several choices to be made when undertaking LCA/carbon footprint studies. Even though there are standards such as ISO 14044/14067, on how to deliver an LCA study, there is always potential for wide ranging interpretation. That is why it's important to have sector guidance to provide clarity on specific and unique situations that can have significant impact on the results. For example, one important choice in any dairy LCA study is how to manage the co-products milk and meat. As seen below, how the greenhouse gas emissions are attributed to milk and meat (allocation of impacts to each) has a significant impact on the carbon footprint of milk. Hence, it is critical to align on these methodological choices.

Carbon footprint of milk using different allocation choices

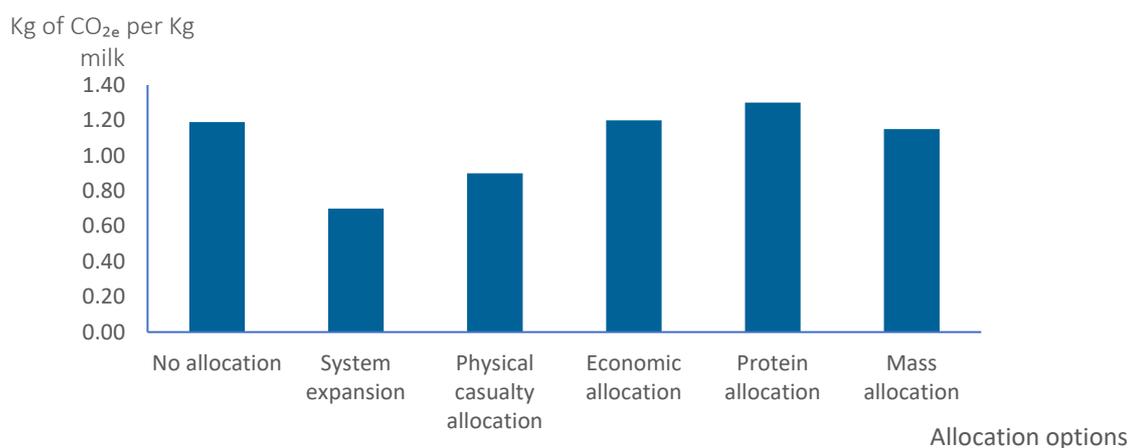


Figure 1. How greenhouse emissions are attributed to milk and meat by Flysjö (2011)

Purpose of the methodology

Applying this attributional methodology enables

- The dairy industry to accelerate its journey to reduce GHG emissions across the value chain.
- Comparison of the carbon footprint between products in the same product category.
- Reporting of GHG emissions from the farming, processing and (now also) retail, use and end of life stages of the value chain (corporate or product reporting).
- Identification of hotspots to prioritize for targeted mitigation actions.
- Monitoring of improvements over time to appreciate and demonstrate progress.
- Determination of the impact of different mitigation options.

What the methodology is not designed for

This methodology should not be used in comparison studies of products in different product categories (i.e., other food products are 'out of scope'). If this is required, a calculation model that incorporates nutritional values as a relevant functional unit is required. The IDF also has activity in this area.

The Action Team:

The 44-member expert action team includes academia, policy makers, dairy company specialists, consultants, and tool developers from 17 different geographies. This team is charged with critical challenge of the current (2015) version and the identification and review of scientific advancements that should be considered for incorporation in the next edition.

Overall review and update

The action team is reviewing the entire methodology though has identified some key areas where sub-groups are undertaking a more forensic review and updating process.

Key areas of focus

Areas of particular attention are currently

- *Scope:* i.e. Is the approach sufficiently appropriate for both dairy cows and buffalo and all production typologies?
- *Boundaries:* i.e. Should the boundary extend to incorporate the retail or further aspects of the dairy value chain?
- *Emission factors:* i.e. Does the document use the most up to date emission factors as published by the IPCC?
- *Allocation approaches:* Are the recommended allocation approaches appropriate or should others be considered in relation to the individual farm actions e.g., manure as fertilizer or used for energy generation?
- *Land use and land use change:* Is this critically important topic sufficiently covered in the current methodology and should it include guidance on carbon removals/ sequestration?

Timeline

The process of reviewing identifying and assimilating the latest science and then reaching consensus is a time-consuming process. The IDF recognizes the importance of investing the necessary time to fully explore the alternatives and associated implications when applied.

The IDF plan to release this methodology in Q2, 2022.





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The IDF is the leading source of scientific and technical expertise for all stakeholders of the dairy chain. Since 1903, IDF has provided a mechanism for the dairy sector to reach global consensus on how to help feed the world with safe and sustainable dairy products. A recognized international authority in the development of science-based standards for the dairy sector, IDF has an important role to play in ensuring the right policies, standards, practices and regulations are in place to ensure the world's dairy products are safe and sustainable.

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