Product Carbon Footprint

Summary Report

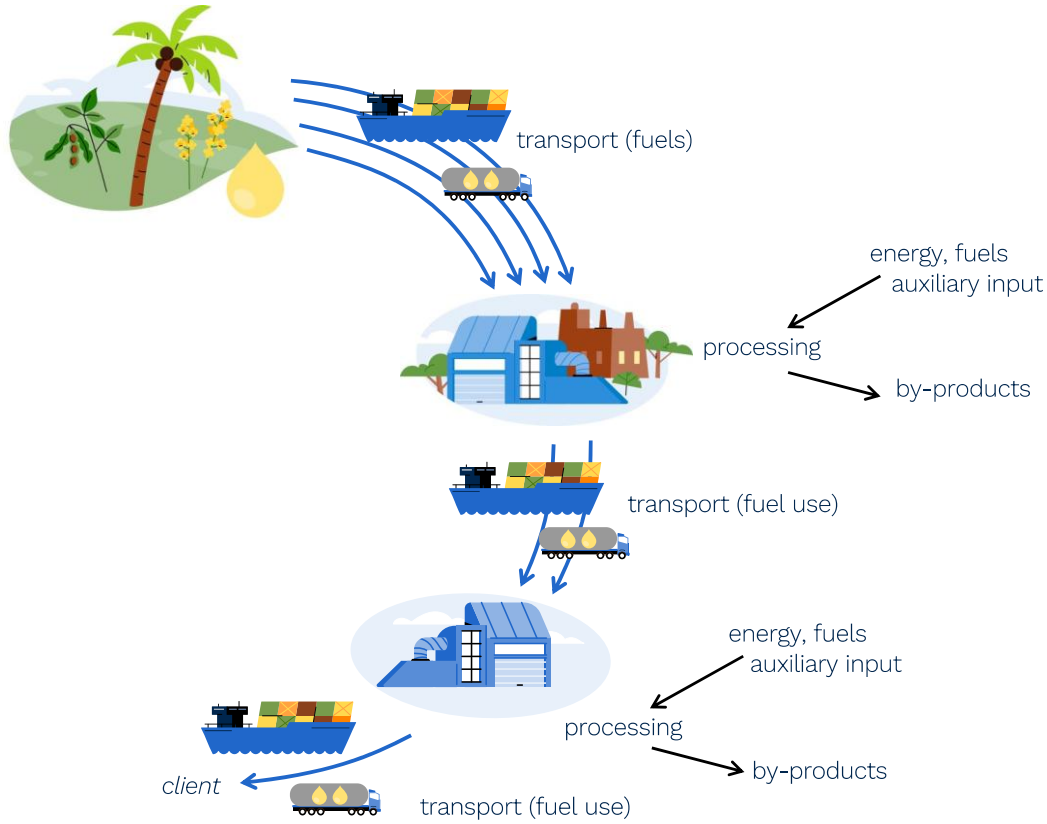
Method

The product's carbon footprint was calculated with AAK's Carbon Footprint Calculator[1]. This calculator estimates a product's carbon footprint based on:

- specification of product formulation (including sourcing countries for raw materials and selected factory locations),
- typical processing parameters (specific energy uses, yields to products, etc.),
- a dataset of typical carbon footprint values for (raw) materials acquired by AAK.

The method is consistent with the Environmental Footprint Category Rules (PEFCR) for vegetable oil as defined by FEDIOL[2], with the exception that – because of lack of appropriate primary data – it largely uses secondary data.

System boundaries



For estimating the product's carbon footprint (CFP) the greenhouse gas (GHG) emissions from cradle-to-delivery are described, specifically GHG emissions associated to production and supply of raw materials, transport (fuel use; from supply of acquired materials up to delivery of the final product) and processing (energy and auxiliary inputs use).

The method follows FEDIOL's recommendations for the list of greenhouse gasses included:

- Raw materials: diverse elementary flows may apply in raw material production including milling (carbon dioxide, methane, dinitrogen monoxide, land transformation).
- Processing (including shea and rapeseed oil extraction): carbon dioxide emissions associated to energy and fuel use + specified greenhouse gas emissions associated to auxiliary inputs + intermediate packaging.

[1] J. Broeze, Calculating vegetable oil climate impact with AAK Carbon Footprint calculator, Wageningen Food & Biobased Research, Report (2024).
[2] FEDIOL, Final draft. Product Environmental Footprint Category Rules for vegetable oil and protein meal industry products, Version 1.0, April 2022.

Life Cycle Inventory

The Life Cycle Inventory includes the following life cycle steps:

Raw material	Location of origin	Dataset used
Shea Kernels	Kolo Nafaso	Based on AAK stats + Contract manufacturer specific data

- Raw materials sourced by AAK
- Processing steps within AAK and at Contract manufacturers production site for Lipex SheaSolve, including in-between transportation to the different locations of processing
- Packaging
- Transportation at origin, from origin to AAK gate and intra-company/AAK-toller transportation activities

Scope & Assumptions

- All processes' impact are modelled based on estimations obtained from our production site in Karlshamn and data obtained from contract manufacturers production site for Lipex sheaSolve specific data.
- Emissions estimated from Contract manufacturer's processing are based on a pessimistic scenario on what the emissions should be if AAK site Karlshamn were to process the finished material.
- Allocation is based on mass.
- Transportation distances are calculated based on Bertoli, S., M. Goujon & O. Santoni, 2016. "The CERDI-seadistance database," Working Papers 201607, CERDI, while their GHG intensity (kg CO_2-eq per ton x km) is aligned with FEDIOL's calculation methodology.
- Packaging impact is in scope of these results.
- Transportation to customer's location is not in scope of this result.

Results

Product Name	Global Warming Potential (Kg CO_2-eq per Kg)
LIPEX® SheaLuxe TR™	2.32 ± 10%

Disclaimer

This report is based on carbon footprint studies conducted by AAK internally, in alignment with the report "Calculating vegetable oil climate impact with AAK Carbon Footprint calculator" by J. Broeze of the Wageningen Food & Biobased Research. AAK's methodological tool is following the recommendations of the Product Environmental Footprint Category Rules for vegetable oil and protein meal industry products (FEDIOL, April 2022). The results are provided to the best of AAK's knowledge and intentions with the objective to offer transparency on AAK's upstream and core operations' impact. A mix of primary and secondary data have been used for the development of this report. AAK does not allow the sharing and/or publishing of the information of this report without its prior written consent. No rights derive from this document.

[3] JEstimates based on Bertoli, S., M. Goujon & O. Santoni, 2016. "The CERDI-seadistance database," Working Papers 201607, CERDI.