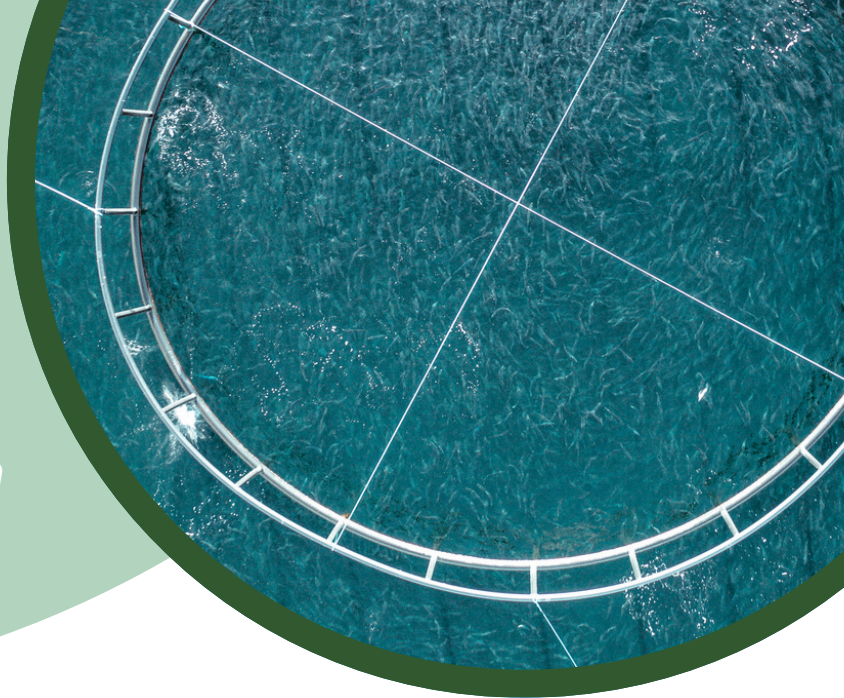




Case Study

Quantifying Sustainability in Aquaculture Feed via LCA



Overview

Alltech Coppens, in collaboration with Alltech Fennoaqua and industry stakeholders, has launched a pioneering research initiative led by nutritional researcher Maud Valkenaars, to quantify precise sustainability metrics in fish feed. This project will use life cycle assessment (LCA) tools to evaluate environmental impacts across the entire aquaculture value chain.

The goal is to apply rigorous sustainability metrics within fish feed formulation, that together with novel concepts such as dietary net energy evaluation, greatly enhance the accuracy of nutritional programs for fish and guide the composition of fish feeds of the future. The approach aligns with future regulatory expectations whilst simultaneously ensuring that diets are formulated at the highest level of precision, solidifying both Alltech Coppens and Alltech Fennoaqua's position as leaders in sustainable aquaculture innovation. This research involves multiple stakeholders throughout the aquaculture value chain, from additives to finished feed and from farmers to retailers, with the world-renowned Institute of Aquaculture at the University of Stirling acting as the lead academic partner in the project.

Impact

The LCA-based feed formulation model enables more environmentally responsible decision making in aquaculture, particularly when the

differences in the digestibility and utilization of the vast variety of raw materials used within fish feeds produced for various fish species are accounted for. The first trials of the project will shortly begin and will focus on two fish species with very different physiologies and farming cycles, rainbow trout and African catfish. The trials will further build upon previous research conducted by Alltech Fennoaqua, which partly contributed to the success of their industry-leading low phosphorous Hercules Baltic feed for trout.

The initiative supports future-proofing Alltech's aqua business and enhances its reputation for science-backed sustainability. The aquaculture segment has grown feed tonnage by 50% over three years, with Chile sales up 49% year over year. The Alltech E-CO₂ model received third-party accreditation from the Carbon Trust in 2024, streamlining the LCA process and ensuring accuracy and efficiency.

For the future, Alltech is deepening the precision of its LCAs and expanding the scope of its sustainability initiatives, including streamlining global data related to ingredients, packaging and transportation. A feasibility trial for this system is underway at one of Alltech's facilities in Spain, and the team looks forward to sharing results as this trial progresses.

Supporting Materials

- [2024 Alltech Coppens Sustainability Report](#)
- [2024 Alltech Fennoaqua Sustainability Report](#)
- [2024 Alltech Sustainability Report](#)

*This sustainability-related case study was provided by **Alltech**.*

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