

Title: Calculating the true costs of protein sources by integrating environmental costs and market prices

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Abstract:

The food sector is responsible for a great part of the environmental impact of our society (for instance, according to the UN, about a third of all human-made greenhouse gas emissions are linked to this sector) and protein sources, as one of the main food groups, have a particularly significant impact on the environment. Understanding the environmental and economic impacts of dietary choices is crucial, especially proteins choices, a main food source. Market prices alone do not comprehensively represent the true costs for society. True Cost Accounting is a methodology that quantifies the comprehensive economic, environmental, and social costs. True cost, which integrate market prices with hidden environmental costs of protein alternative sources, including both animal-based and plant-based options, were estimated. A life cycle approach was applied, considering both a conventional mass-based functional unit and a proposed protein-content-based functional unit, which integrates the source's efficiency to deliver protein nutrient. In a mass-based calculation, beef and lamb production consistently demonstrate the highest true costs. However, when the calculation of the true price is based on real protein content, seafood commands the highest value. In summary, our study emphasizes the significance of informed dietary choices that account for both environmental sustainability and economic factors, and the need to use proper methodologies for the quantitative accounting. Further research is necessary to include social dimensions in the study, given their current unmeasurability due to complexity and limited information.

Biography:

I am a postdoctoral researcher at the UNESCO Chair in Life Cycle and Climate Change (ESCI-UPF). My primary research interests lie in Environmental Impact Assessment, Life Cycle Assessment, Green Supply Chain Management, and Carbon Footprint. During my Master's degree, I evaluated the green management system of Iran Aseman Airline, and throughout my Ph.D., I focused on green supply chain management at a petrochemical site in Iran, where I developed a conceptual model for evaluating the environmental impacts of the site. In my second Ph.D., I developed an Excel-based tool for calculating the three scopes of greenhouse gas emissions in ports, earning recognition as one of the top ten theses in the 'Thesis in 4 Minutes' competition that year. I have an academic background, having served as a researcher at the Waste Biotechnology Research Group at Alzahra University and supervised master's theses at Islamic Azad University (Najaf Abad) in Iran. Additionally, I worked at the BETA Research Center at the University of Vic for a year. In 2014, I co-authored a book titled 'Urban Environmental Management Strategies,' and in 2016, I translated and published a book titled 'Green Supply Chain Management. Since 2023 I am also giving classes at ESCI-UPF.

Furthermore, I bring over a decade of experience from consultancy firms in Iran, where I worked on assessing the environmental impacts of various projects, particularly in the oil and gas and road construction sectors in Iran.