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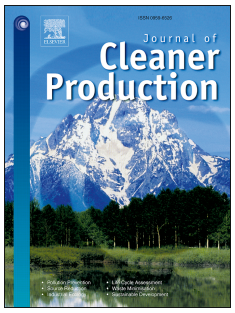

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Thomas Schaubroeck, Siele Ceuppens, Anh Duc Luong, Enrico Benetto, Steven De Meester, Carl Lachat, Mieke Uyttendaele

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A pragmatic framework to score and inform about the environmental sustainability and nutritional profile of canteen meals, a case study on a university canteen

Thomas Schaubroeck,[a,b*] Siele Ceuppens,[c] Anh Duc Luong,[a] Enrico Benetto,[b] Steven De Meester,[a,d] Carl Lachat,[e] & Mieke Uyttendaele[c]

[a] Research Group EnVOC, Ghent University, Coupure Links 653, B-9000 Ghent, Belgium
[b] RDI Unit Life Cycle Sustainability and Risk Assessment (LiSRA), Department of Environmental Research & Innovation (ERIN), Luxembourg Institute of Science and Technology (LIST), 41 Rue du Brill, L-4422 Belvaux, Luxembourg
[c] Lab of Food Microbiology and Food Preservation, Department of Food Safety & Food Quality, Ghent University, Coupure Links 653, B-9000 Ghent, Belgium
[d] Department of Industrial Biological Sciences, Ghent University, Graaf Karel de Goedelaan 5, 8500 Kortrijk
[e] Department of Food Safety and Food Quality, Ghent University, Coupure Links 653, B-9000 Ghent, Belgium

*: corresponding author: thomas.schaubroeck@gmail.com

Abstract

This paper presents a pragmatic framework to inform stakeholders about the sustainability of canteen meals. The framework consists of four parts: (1) an ecological scoring system, based on life cycle assessment results, to score the ecological impact of meals or their components, from which the customer can select to compose a meal; (2) a nutritional scoring of meals based on meeting nutritional criteria; (3) a scoring system to assess the efforts undertaken by the canteen suppliers with regard to sustainable production and management and (4) collected information on relevant topics in food sustainability not covered in previous parts. The framework has furthermore been customized for and applied to the canteen of Ghent University. In light of part 1, several methods to characterize the environmental impact of food products were benchmarked, pinpointing the ecological footprint, the amount of land needed for production and to sequester CO_2, as most appropriate one. Moreover, the ecological footprint of harvested fish was newly characterized as amount of land indirectly needed for their growth in nature. This highlighted the much lower (2-15 times) ecological footprint of aquaculture than caught fish products, according to this method. The ecological scoring system was consequently based on the ecological footprint but also the carbon footprint due to its relevance, covering the discrepancy between meat, with relatively higher carbon footprint, and caught fish products, with relatively higher ecological footprint. Besides a promotion of more sustainable meals, following guidelines and conclusions were derived: (1) the ecological impact depends on more than just the main component, e.g. frying oil contributes the most to the ecological footprint of fries, and type of food, e.g. a portion ‘pangasius orientale’ (fish), has an about 30% lower ecological footprint than a portion ‘ratatouille vegetables’ (vegetarian); (2) lower salt content, which can mount up to >80% for a meal, to improve nutritional value and (3) provide a variety of portion sizes because nutritional demand varies. Although further improvement is