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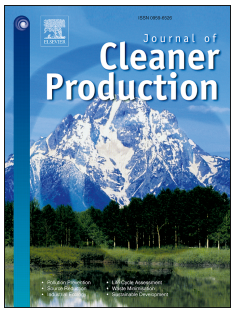

Food Chain Evaluator, a tool for analyzing the impacts and designing scenarios for the institutional catering in Lombardy (Italy)

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Food Chain Evaluator, a tool for analyzing the impacts and designing scenarios for the institutional catering in Lombardy (Italy)

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Abstract
A method was developed and applied to evaluate the impacts of food production for improving institutional catering in Lombardy (northern Italy) and to outline possible improved scenarios. The research takes into account different crop managements (i.e. organic agriculture and adoption of local products) and different dietary choices able to guaranty the same nutritional contents. The non-renewable energy consumed for the production of foods managed by the institutional catering system is proposed as indicator to compare different policies together with other indicators as productive land and productive cost. A case of study is presented to test the overall method. The outcomes of the work could support a reorientation of both the production and consumption systems. In general, the shift towards local and organic products implies a reduction of the impacts evaluated. Further, the important impacts of beef consumption, in particular in terms of energy and land consumption are demonstrated.
The work permits an interesting insight about institutional catering, taking into account not only the single food chains but also the composition of the meals by different food products. An improvement of the tool is in progress in order to properly evaluate the stages of cooking, refrigeration, packaging, energy consumption in catering areas and food waste management. A sensitivity analysis will be carried out for assessing the reliability of the results. Finally, other complex environmental indicators such as carbon footprint or ecological footprint could represent other future interesting developments of the tool.

Keywords: institutional catering; food energy consumption; food supply chain; cumulative energy demand; life cycle assessment.

Acronyms
CED: cumulative energy demand. In this paper CED include only the non-renewable CED
em: equivalent meal
EN: energy content of food as nutritional value
FCE: Food Chain Evaluator
LCA: Life Cycle Assessment
LCI: Life Cycle Inventory
N: number of meals in 1 year