Book of Abstracts

**11th International Conference on
Life Cycle Assessment of Food 2018 (LCA Food)**

in conjunction with

6th LCA AgriFood Asia

**and 7th International Conference on
Green and Sustainable Innovation (ICGSI)**

*"Global food challenges
towards sustainable
consumption and production"*

**16 – 20 October 2018
Bangkok, Thailand**

Organized by

KU KASETSART UNIVERSITY   KMUTT   NSTDA

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First proposition to include an integrated indicator of soil quality within the life cycle assessment framework

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Abstract

Integrating a soil quality indicator within the Life Cycle Assessment (LCA) is necessary to assess the impact of land use on ecosystem services and related area of protections. Despite recent developments in the area, it remains difficult to find a consensus to integrate such an indicator due to the complex definition and assessment of soil quality. We propose a new way to integrate soil quality within LCA based on an integrative conception of soil quality that aims to assess directly the results of soil functions. First, we adapted a land management factor from the IPCC factors to quantitatively define the impact of various management practices on soil quality. Second, using this factor we calibrated a predictive model based on in-field soil quality integrative assessment from the Biofunctool® index. Over five experimental sites in a regional context of South East Asia, we proved that it is possible to predict the impact of land management on soil functional quality, with a restricted set of input parameters. Further studies on larger data set, in other contexts, may strengthen the approach and will make it possible to apply the model at a global scale to meet the LCA application requirements.

Keywords: Soil Quality, Life Cycle Assessment, Land Management Factor, Soil Quality Index, Biofunctool®

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