

Terms of Reference for the Life-Cycle Assessment expert review

I. Context

Life cycle assessment (LCA) has in common with scientific work the difficulty of establishing objective quality criteria. Many of the judgements a practitioner will have to make in the course of a life cycle assessment cannot be said to be true or false, but only more or less debatable. Therefore, the ultimate quality appraisal can only be subjective – although based on professional experience (see Guidelines for critical review of LCA).

Norms ISO 14040:2006 and ISO/TS 14071 (2014) propose a critical review for practitioners for each LCA performed. However, the purpose of such a critical review is to assure conformance to the ISO standards when organisations want to publish LCA results. A critical review is therefore very rigorous and time consuming for the LCA expert performing the study. For the VCA4D studies, a critical review that conforms to the ISO standards would therefore go beyond the scope of the studies. Nevertheless, these references are useful in an LCA peer review of the VCA4D studies.

Already during VCA4D Phase I, a mechanism of backstopping was included. This allowed for a discussion and check of the validity of the results and work done by external colleagues, which is common practice among LCA practitioners. As approximations are to be done when manipulating a multitude of data in a tight timeframe, it is crucial that an external reviewer could check the assumptions and technical choices and the whole calculation chain from field data to estimated impacts and damages.

Accordingly, a review by external peers would also add value in phase II to the assessment and bring actual improvement. It should therefore be allocated specific time and resources. It will help to increase the robustness of the LCA in the context of agri-food value chains for LCA in developing countries: diversity and complexity, lack of technical and agronomic data, scarcity of operational and valid models for inventory and impact modelling, etc.

A process of simplified peer review (called LCA expert review) therefore will take place in the frame of the VCA4D project. Even if the final VCA4D reports are not considered as “scientific publication” although they are based on scientific approaches, EU-INTPA is still aiming at robust results to progressively integrate possible improvements in order to propose future adjustments to VCA4D.

II. Objectives

The objectives of the LCA expert review are:

1. to assess critically the quality of the LCA data collected and of the results and conclusions (according to ISO 14040-44 standard).
2. to assess the approach and the methodological choices for implementing LCA under the constraints of these studies: time, availability/access to data, etc.

The goal is not to strictly align the use of LCA by experts. VCA4D allows the experts to choose different ways of implementing LCA (diversity of the approaches within the

ISO14040-44 framework) according to the variety of practices of Agrinatura research members and outside Agrinatura (independent consultants, other centres...).

This collaboration between VCA experts and expert reviewers will contribute to the project's aims of building capacities and creating a community of practices.

III. Qualifications

The LCA expert reviewer:

S/he will be a senior expert with deep knowledge of and experience on the Life Cycle Assessment.

Experience on value chain analysis in developing countries will be appreciated.

Experience in agricultural value chains is required.

S/he will preferably use the SimaPro software for LCA.

S/he will come if possible from Agrinatura or affiliated centres or be independent LCA experts.

IV. The assignment

The LCA reviewer's expertise will encompass several steps of the study and notably: the goal and scope of the definition; inventory analysis including data collection; modelling; impact assessment; life cycle interpretation; drafting of the LCA report (see also Norm ISO/TS 14071 p5).

When possible, the expert reviewer will be selected among the LCA experts who participate to the project on other studies, so as to maintain a harmonized way of thought.

The study experts and the reviewer will organise their collaboration throughout the duration of the study in order to deliver pertinent support throughout.

V. Reports and deliverables

The LCA expert reviewer will send to the PMU a note of 5 pages maximum including:

- the support s/he gave to the main LCA expert
- an appraisal on the robustness of the LCA study considering the ISO 14040 and 14044, the scientific and technical validity, and of the report transparency and consistency of the study report (see also Norm ISO/TS 14071 p3).
- suggestions for methodological improvements
- identified limitations in relation to the goals of the study

VI. Location and duration

Each LCA expert reviewer will be contracted in for 4 days for each VCA study that will be performed.

The assignment for the LCA expert reviewer is home based. The expert will submit his/her report to the PMU at the same time than the draft final report from the VCA team of experts.