

Social LCA: interest, curiosity, scepticism and challenges

Clara Valente

Ostfold Research (Norway)

1. Context and scope

In the last years, it is increased the interest towards sustainable production. Society is more and more aware that products could have negative influence not only for the environment, but also for the society. That is why there is a need for methodologies assessing social performance of products, such as social LCA (SLCA).

Our research institute, traditionally specialized in E-LCA, is currently involved in three projects (see at projects' reference in the bibliography) where the goal is to assess social impacts of respectively textile, nano-cellulose and ligno-cellulosic products (bio chemicals) in Norway.

The scope of these projects is to increase our knowledge on this topic through literature review and state of the art on SLCA, develop a methodological framework for social LCA analysis, identify both the hotspots and relevant indicators for each examined product and when possible testing these indicators with stakeholders.

Social risks for textile and biochemical products are presented by social hotspot analysis using the social hotspot database (SHDB) as main screening tool.

In the main text of this abstract, we will describe the phases of methodological framework development for SLCA, the challenges met in performing SLCA in general and specific for the three case studies and we will present some results.

2. Main text

In the first phase of the methodological framework development, a literature study was carried out by downloading scientific article and report related to the theme of social LCA, social indicators and sustainability in general and related to the examined products. The selection of the most relevant articles addressed to the goal of the study was challenging, due to the lack of social LCA case study specific for these products. Many articles cited the words sustainability, social and socio-economic aspects, in connection with LCA, although only to introduce the relevance of LCA for the society.

The diversity of terminology utilized in different literature sources (sLCA, social LCA, societal LCA etc.) has increased the complexity of the literature review.

In phase 2, we selected social indicators according to different scientific sources. This selection was performed by literature research as described in phase 1 followed by consulting products related studies, if present.

In phase 3, we developed a questionnaire for data collection, testing the proposed selection of social indicators with stakeholders. It was possible to discuss this selection only for biochemical products.

In the textile case study, due to short-term research project and confidentiality issues (e.g. it was denied to know the source of sub-supplier of synthetic material) we could not test our choice.

In the nano-cellulose case, the application of this nano-material is currently only at laboratory scale, so it is problematic to identify which could be the social impacts. Hence, the next step will be to identify the future social categories and impact influenced by the production and consumption of this product when it will be upscale at industrial scale.

The data collection was very challenging phase, because of difficulties to get in contact with the stakeholders, find right experts, confidentiality matters and very time demanding.

Thus, we have decided to use the social hotspot database (SHDB) (www.socialhotspot.org), developed by New Earth for evaluating the risk of social impacts along the supply chain at country level and specific sector (CCS) (Benoit-Norris et al., 2012).

In the case of textile, we focused on the stakeholder category “worker” in the following sectors:

- a) textile;
- b) wool products and
- c) chemical, rubber plastics.

We assessed three social themes linked to the issue “labor right and decent working conditions”:

- 1) child labour: single issue “risk of child labour in sector (qualitative)”
- 2) poverty: single issue “risk of wages being under 2 \$ per day”
- 3) working time: single issue “risk of excessive working time”

and one social theme for the issue “health and safety”:

- 4) occupation injury and deaths: single issue “fatal injuries by country” (Norway)

The countries involved as suppliers and sub-suppliers were selected individually or contemporary and showed in risk maps. We found very high risk of fatal injuries in the wool product sector for the social category “health and safety”.

Also in the bio refinery case, the highest risk of social impacts at country level (Norway) and sector (forestry; chemical, rubber and plastics product) were connected to the health and safety category.

These results lead to questions why the risk of occupational injuries was so severe in Norway for the health and safety category, if Norway had better reporting system and availability of statistical data and if there were economic incentives for reporting injuries.

In conclusions, we can point out that there is interest in assessing social impacts of products, but at the same time, stakeholders are not prepared to answer to social questionnaire and sceptical to qualitative data. Hence, generic data were used as representative of specific case study. Social Hotspot database was a good starting point for highlighting the social hotspots along the supply chain, but it is necessary to perform deeper analysis for finding out the reliability of data. In addition, several assumptions were necessary. In all our cases, the products were at small-scale production (laboratory for the nano-cellulose, demo plant for the bio-chemicals, boutique for the textile), but the company are interested to scale it up, requiring therefore to make lots of assumptions. Not all sectors are yet represented in the database, so we assumed the corresponding ones (e.g. chemical, rubber and plastics for biochemical products at bio-refinery and for synthetic materials in the textile case study).

References

Projects:

1. Slow fashion: «Establish of Slow Fashion - Made in Norway» (textile case study)
2. NNB: «New Norwegian Biorefinery» (biochemicals case study)
3. NORCEL: «The NORwegian nanoCELLulose Technology Platform» (nano-cellulose case study)

References:

Benoit-Norris, C., Deana Aulisio C., Gregory N., 2012. “Identifying Social Impacts in Product Supply Chains: Overview and Application of the Social Hotspot Database.” *Sustainability* 4 (12): 1946–65

Social Hotspot Database (SHDB). Portal website: <http://www.socialhotspot.org>