Life Cycle Assessment

Context:

- The Problem(s)
- Global GE Perspective

In order to determine whether a product is sustainable, its entire lifecycle should be considered. Why? Because environmental impacts can happen and be distributed throughout a product's entire lifecycle (from the extraction of natural resources to the final disposal). For instance, a production process might be very sustainable (organic, energy efficient, etc), but the resources needed to make the product might come from very far away (implying emissions related to their transportation), or their extraction process might be highly detrimental to the environment or surrounding communities (e.g some types of mining).

Life Cycle Assessment (LCA) is a tool for the systematic evaluation of the environmental aspects of a product or service system through all stages of its life cycle. LCA provides an adequate instrument for environmental decision support. The stages involved in the process include:

- compiling an inventory of relevant inputs and outputs,
- evaluating the potential environmental impacts associated with those inputs and outputs,
- interpreting the results of the inventory and impact phases in relation to the objectives of the study.

LCA also allows for comparison between products that are assessed in the same way, which can make decision making easier for consumers seeking more sustainable products. For producers, LCA can allow for clearer identification on where specific impacts are happening, therefore decisions can be made in order to reduce them, also leading to resource efficiency.

Situation in Latin America and the Caribbean

- Leading countries in LAC

LCA is relatively new in LAC (most organizations are just over a decade old), especially due to the high levels of technical competence, resources and sometimes even technology and software needed to develop an assessment for a product. However, there are several countries that have been advancing in the subject.

There is an Ibero-American LCA Network, where countries like Argentina, Costa Rica, Brazil, Chile, Colombia, Cuba and Peru participate in the Executive Committee. There is also an Association for Life Cycle Assessment in Latin America (ALCALA) located in Costa Rica.

This Association originated in 2003, where in an LCA conference in USA, the Costa Rican delegate proposed to do an international LCA conference in Latin America for the first time. This resulted in a process of unifying LCA experts in the region, implementing the 2005 International Conference on LCA (CILCA) in Costa Rica, and launching ALCALA.

The association has developed a series of projects and events, several of them jointly with the Ibero-American LCA Network.

LCA in LAC has mostly been studied and is present in countries such as Brazil, Chile, Costa Rica, Colombia, Peru and México[1]. There is a Brazilian

[1] An interesting case study of private companies using LCA in the region can be found here:

LCA Association created in 2002, which originated from the Brazilian Technical Standards Association (ABNT). In México, there is a Mexican LCA Network within UNAM's Engineering Institute, where a very relevant entity in LCA is the Center for LCA and Sustainable Design (CADIS). Perú also has its LCA Network, however it is not clear who comprises it. Leadership on LCA in countries like Costa Rica, Colombia and Chile has been shown especially from the private sector, but there are no national networks or organizations promoting LCA as in the other countries mentioned previously.

Links to QI:

- Relevant standards (ISO)
- QI service gaps

The International Organisation for Standardisation (ISO) has standardised LCA within the ISO 14040 and ISO 14070 series standards. Technical Committee ISO/TC 207/SC 5 is in charge of developing these standards, which range from principles and frameworks for LCA, to guidance on how to apply LCA, and the competence needed for LCA reviewers. LCA data is also used in eco-labels (also known as Environmental Product Declarations - EPDs), which are also standardised under the ISO 14020 series which can be used in product certification.

One of the challenges for Environmental Product Declarations is the development of Product Category Rules (PCRs), which describe the requirements that a product must comply with in order to be able to receive a certain declaration. PCRs must be developed for each product or family of products and are key elements in order to be able to compare the declarations of different products. If PCRs are different, even if the product is the same, comparing between declarations will not be possible. Here it will be important for each country to establish what products are the most relevant for developing PCRs: for instance, Costa Rica has started with several cleaning products because of these products' relevance in Public Procurement and how useful it would be to have labeling to categorize them.

(Preliminary) Conclusions

There is potential in spreading knowledge and sharing experiences about LCA in the LAC region. The existence of ALCALA and the Ibero-American network is seen as an opportunity, where they can be used as platforms in order to develop pilot projects. There is potential in involving Caribbean countries, which seem absent in LCA development in the region.

Bibliography and links

Defining Life cycle Assessment

http://www.gdrc.org/uem/lca/lca-define.html

B Resource Guide: Conducting a Life Cycle Assessment (LCA)

http://nbis.org/nbisresources/life_cycle_assessment_thinking/guide_life_cycle_assessment_bcorp.pdf

Life Cycle Initiative (2014). *Life Cycle Thinking in Latin America 12 case studies of LCA and LCM approaches of companies in the region.*

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