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Advancing LCA application in the wood sector: An outsider's call

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The two foci of this talk

- Using LCA as a tool to enact policy changes
- Enhancing LCA adoption



Contours of this talk

- Multi-disciplinary integration of LCA research
- Contextualization of on-going LCA research
- Developing new research directions



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Using LCA as a tool to enact policy change

Attributional versus consequential LCA



Attributional (ALCA)

- Known as the ‘business- as-usual’ (BAU) scenario
- BAU because the values used are averages based on normal, current business practices
- The life cycle impact is quantified by accounting for environmentally relevant physical flows to and from a product system
- Most LCA studies fall into this category



Common questions an ALCA can address

- Attributional LCA aims to describe the average **attributes** of the current, prevalent method of doing something
- Attributional LCA can answer a range of questions, such as: how much energy is currently used (or GHG emitted) to produce product X compared to product Y.



Consequential LCA (CLCA)

- CLCA aims to predict the **consequences** if **changes** are made to an established process (or product use)
- CLCA includes not only direct effects of these changes but also indirect effects
- So, CLCA encompasses one or more attributional LCAs, plus other indirect factors



Common questions a CLCA can address

- How much Carbon saving will happen if all houses were made using wood as opposed to concrete!
- CLCA can come up with a life cycle analysis for any number of such hypothetical scenarios



So what is my point?

- ALCA is a good first step
- CLCA important to create a “climate” that could foster intended changes in products/processes (i.e., enhanced use of wood)



Important considerations

- Both have advantages and limitations
- Match the method with the questions you want to explore

Brander, M., Tipper, R., Hutchison, C., & Davis, G. (2008). Technical Paper: Consequential and attributional approaches to LCA: a Guide to policy makers with specific reference to greenhouse gas LCA of biofuels

Plevin, R. J., Delucchi, M. A. and Creutzig, F. (2014), Using Attributional Life Cycle Assessment to Estimate Climate-Change Mitigation Benefits Misleads Policy Makers. *Journal of Industrial Ecology*, 18: 73–83.



Here is the gist of the whole matter

- Due to its several inherent simplifications, ALCA can not predict real-world impacts on climate change, and hence the usual quantitative interpretation of ALCA results is not valid
- CLCA- a conceptually superior approach- avoids many ALCA limitations, but because it is meant to model actual changes in the real world, CLCA results are scenario dependent and uncertain
- It is important to identify appropriate uses of ALCA and CLCA to help policy makers implement policies that are less likely to have perverse effects and more likely to lead to effective environmental policies



To enact policy changes

1. Re-frame LCA

- ✓ *Remain open about LCA limitations*
- ✓ *From environmental decision making to environmental judgement making*
- ✓ *Sell LCA not for its definitiveness but for its magnifying capacity to look at what we want to look at*

To enact policy changes

2. Address context bounded big questions

(e.g. How should Slovenes build their homes?)

- ✓ *Conduct regional (sub-regional) CLCA studies*
- ✓ *Tie with projected population growth and migration patterns*
- ✓ *Tie with projected household change patterns
(Develop inter-disciplinary research teams)*



On enhancing adoption

External pull: Consumer side

- Develop NGOs network
- Develop an emotional cloud around LCA
- Make it “cool”
- Make it simple to understand
- Develop a LCA-logo and brand
- Consider more parameters than just energy or GHG
- S-LCA could be a useful frontier
- H-LCA?

Internal pull: Company side

- Production-line targets (LCA as a monitoring tool)



Overall

1. Address bigger questions with policy pitch
2. Get into end-consumers' minds
3. Ride bandwagons of popularizing technologies/
debates (Big data, 3-d printing, bio-economy)
4. Develop multi-disciplinary collaborations
5. Talk to us 😊