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Expanding the coverage of ecosystem services in life cycle assessment: an interdisciplinary venture

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Citation

Migoni Alejandre, E. (2023, October 5). *Expanding the coverage of ecosystem services in life cycle assessment: an interdisciplinary venture*. Retrieved from <https://hdl.handle.net/1887/3643103>

Version: Publisher's Version

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Note: To cite this publication please use the final published version (if applicable).

Propositions

Expanding the Coverage of Ecosystem Services in Life Cycle Assessment An Interdisciplinary Venture

1. The ecosystem service approach is complementary to common Life Cycle Impact Assessment (LCIA) practices by providing a practical way of prioritizing among the thousands of environmental impacts (This thesis, Chapter 2).
2. The compatibility of characterization factors with common inventory data remains a key challenge for the applicability of the impact assessment methods proposed (This thesis, Chapters 2-3).
3. A comprehensive analysis of land transformation assessment in LCA is needed to avoid perpetuating inaccurate practices that can lead to an underestimation of critical impacts (This thesis, Chapters 3-4).
4. The complex spatial dynamics of ecosystem services can be addressed through land system archetypes to characterize environmental impacts at compatible spatial scales (This thesis, Chapter 5).
5. Starting from the understanding that there is not a “one size fits them all”-method, recommendations for developing characterization factors for ecosystem services should focus on the ecological mechanisms involved (Othoniel et al., 2016; This thesis, Chapter 2).
6. Expert opinion can fill gaps to parameterize ecological models, particularly when data is scarce and when combined with statistical analysis (Czembor et al., 2011; This thesis, Chapter 4).
7. Inventories and impact assessment methods in LCA have constraints in the levels of detail they can provide (Koellner et al., 2013), but their use can aid the identification of problematic processes or vulnerable areas that require further investigation (This thesis, Chapter 5).
8. Assessing land use impacts in LCA is an issue of allocation (Mila i Canals et al., 2007) that can be addressed by incorporating multiple impact pathways (This thesis, Chapters 2-5).
9. The Earth, the pale blue dot, is the only world known so far to harbor life (Sagan, 1994), underscoring our fundamental responsibility to identify and account for the myriad of anthropogenic impacts (This thesis, Chapter 2).

10. A deeper understanding of Earth's climate, its ecosystems, and our use of those ecosystems, requires an intellectual framework that balances disciplinary expertise with cross-disciplinary prowess (Bonan 2016; This thesis, Chapter 4).
11. Always go a little further into the water than you feel you're capable of being in. And when you don't feel that your feet are quite touching the bottom, you're just about in the right place to do something exciting (Bowie, 1997)

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Leiden, 5 October 2023