ASSESSING SOCIAL IMPLICATIONS OF CIRCULAR ECONOMY BY INTEGRATING CIRCULARITY IN S-LCA

Anna Luthin, Institute of Sustainability in Civil Engineering, RWTH Aachen University, Germany
anna.luthin@inab.rwth-aachen.de
Marzia Traverso, Institute of Sustainability in Civil Engineering, RWTH Aachen University, Germany

Even though circular economy (CE) is crucial for sustainable performance, not all circularity activities are automatically more sustainable as some trade-offs may occur (e.g., major environmental impacts due to intensive processing of wastes or social effects when production/treatment locations change). In the position paper of the Life Cycle Initiative, Peña et al. (2021) stated the importance of combining CE and life cycle approaches to avoid burden shifting. Apart from economic factors, the recent focus of research in CE is on environmental impacts and how to measure them. Sassanelli et al. (2019) identified life cycle assessment (LCA) as the most used tool for assessing environmental consequences of CE. To ensure that circularity holistically contributes to sustainable behavior, besides economic and environmental aspects, also the third pillar of sustainability, namely social aspects, must be considered. However, Kirchherr, Reike and Hekkert (2017) found that research on social impacts resulting from a shift from a linear to a circular economy is still lacking. Thus, aim of this research is to identify social implications of circular economy and to investigate in what manner circularity aspects currently are assessed in social life cycle assessment (S-LCA). The research starts with a literature review on social consequences of CE. As CE mostly replaces former linear business models, the research includes identifying affected stakeholders in both the former linear and new circular strategies. Based on this analysis, the identified implications will be linked to the relevant stakeholders and S-LCA subcategories. Adequate indicators for assessing the social performance of CE strategies will be proposed referring to indicators presented in the Methodological Sheets for Subcategories in Social Life Cycle Assessment (S-LCA) 2021 but also by identifying relevant new indicators that cover social implications of CE that are not covered by existing indicators. Moreover, further CE indicators that should be considered to link circularity performance and S-LCA will be proposed. Hence, a combination of indicators will be presented that will outline how circularity, for example, influences regional employment, cultural changes, education, and other social aspects.

Kirchherr, J., Reike, D. and Hekkert, M. (2017) 'Conceptualizing the circular economy: An analysis of 114 definitions', Resources, Conservation and Recycling, 127(April), pp. 221–232. doi: 10.1016/j.resconrec.2017.09.005.
Peña, C. et al. (2021) 'Using life cycle assessment to achieve a circular economy', International Journal of Life Cycle Assessment. Springer Berlin Heidelberg, 26(2), pp. 215–220. doi: 10.1007/s11367-020-01856-z.
Sassanelli, C. et al. (2019) 'Circular economy performance assessment methods: A systematic literature review', Journal of Cleaner Production. Elsevier Ltd, 229, pp. 440–453. doi: 10.1016/j.jclepro.2019.05.019.