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Assessment of Social Footprint of RSS Manufacturing using Social Life Cycle Assessment; A Case Study in a RSS Factory in Sri Lanka

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Abstract

Sri Lanka is one of the pioneers of producing high quality natural rubber in the world. Being one of the key players in the natural rubber industry, Ribbed Smoked Sheets (RSS) manufacturing has also become one of the rapidly expanding industries in the world and it has a high rate of environmental and social impacts. Although the environmentally sustainable aspect has been addressed through several existing Environmental Life Cycle Assessment (E-LCA) methods, proper social sustainability assessment has yet to be addressed. To address this issue, Social Life Cycle Assessment (S-LCA) is performed to trace the social footprint of RSS manufacturing by tracing the assessment of potential impacts on six stakeholder groups. Workers, Local Community, Value Chain Actors, Society, Children, and Consumers. SLCA systematically assesses the social impact of a product. Most existing SLCAs only highlight negative impacts and their reductions or rarely trace positive social impacts and their increments. But positive social impacts highlight opportunities to improve human well-being and present a complete picture of a product's overall social impact. To fill this gap, “More Good and Less Bad” method is introduced for impact assessment. The More Good and Less Bad method describes the positive changes in good and bad social states. It introduces two new terms into SLCA which are “more-good” (improvements within the good domain) and “less-bad” (improvements within the bad domain). Good and bad social domains are distinguished using compliance levels (e.g., industry standards), which are referred to as baseline requirements. The evaluation of the social impact level of the organization is performed using a novel social performance index (SPI). The SPI is computed by multiplying social performance levels by worker hours at the factory/company level. Social performance levels are determined using a novel decision tree and a systematically proposed set of indicators representing basic requirements and the good and bad domains of each subcategory. Worker hours were used as an activity variable, enabling the application of the SPI to the entire supply chain of a product; it can be evaluated using a worker hour model. The 'Cradle-to-gate' approach is used, which involves rubber tapping to RSS production.

Keywords: *SLCA, Positive social impacts, Negative social impacts, Social performance index, Human well-being, Ribbed smoked sheets*