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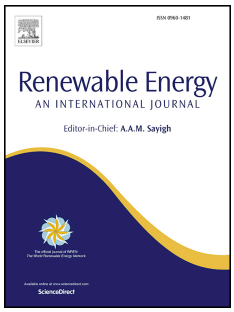

Cumulative social effect assessment framework to evaluate the accumulation of social sustainability benefits of regional bioenergy value chains

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ABSTRACT

The article presents a cumulative social effects assessment framework -based methodology. The devised methodology applies a hierarchy of social sustainability indicators and core social components. The core social components are individual, community and societal impacts and, within these, nine key social sustainability indicators are assessed. This methodology was tested on a case study covering a regional energy value chain in the Lahti region in Finland. The evaluation of the nine key indicators, and the quantification of their impacts along the regional energy production value chain was demonstrated for the region. The results indicate that locally sourced energy production is a socially sustainable solution that ensures reliable and affordable energy to local communities. It was noted that the social benefits of local value chains have great potential for accumulation. The results also indicate that use of the cumulative social effects assessment framework provides a deeper understanding of a region's social sustainability matters and identifies best practices available. It was suggested that the framework can be used by regional stakeholders as a screening tool.

KEYWORDS

Bioenergy production, solid recovered fuel (SRF), social sustainability, social indicators and components, value chains, cumulative effect assessment.