

Supporting environmental certification in the agrifood sector through online lifecycle assessment tool: Identification of end-users' requirements

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Abstract

Life Cycle Assessment, also known as LCA, is the most widely acknowledged methodology for the systematic analysis of the potential, cradle-to-grave, environmental impacts of products or services. Within the framework of an LCA study, the potential environmental impacts throughout the entire life cycle of a product or service are evaluated. In this light, the environmental impacts within the phases of production, distribution, use and end-of-life are estimated, following a highly standardized, ISO defined, procedure. Apart from identifying hotspots and improving the environmental performance of a system, LCA is widely used internationally for certification purposes, e.g. for the issuance of Environmental Product Declaration or the development of an ecolabel. However, all LCA software that are available in the market use static data and Life Cycle Inventory (LCI) databases with average values, for the calculation of impacts for any given production process. To that end, in the framework of the "Real-time, environmental assessment of agricultural and agrifood production for the support of certification schemes" project, a real-time, online LCA Engine is being developed, focusing on the agrifood industrial sector, where certification is highly demanded. The tool, apart from exploiting data from available LCI databases (e.g. ecoinvent), also utilizes real-world data, sourcing from sensors. In the present work, we primarily focus on the determination of the potential end-users' requirements from such a software. The key findings of a survey that has been conducted, are presented. The different needs of a diverse pool of potential end-users, namely farmers, cooperatives, agri-consultants and agrifood producers, are analyzed. The key outcomes of the user requirements survey will be used in order those to be "translated" into functional requirements of the LCA Engine.

Keywords: Life Cycle Assessment; agrifood; sensors; environmental product declaration; Internet of Things

References

The work is funded within the framework of the Operational Programme “Central Macedonia” of the PA 2014-2020, Innovative Investment Plans, and co-financed by the Greek State and the European Union and, in particular, by the European Regional Development Fund (ERDF) (project code: KMP6-0078501).

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