

Working Towards More Sustainable Food Waste: A Circularity Perspective

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Abstract : Food waste implies an inefficient management of the final stages in the food supply chain. Referring to Sustainable Development Goals (SDGs) by United Nations, the SDG 12.3 proposes to halve per capita food waste at the retail and consumer level and to reduce food losses. In the linear system, food waste is disposed and, to a lesser extent, recovery or reused after consumption. With the negative effect on stocks, the current food consumption system is based on 'produce, take and dispose' which put huge pressure on raw materials and energy resources. Therefore, greater focus on the circular management of food waste will mitigate the environmental, economic, and social impact, following a Triple Bottom Line (TBL) approach and consequently the SDGs fulfilment. A mixed methodology is used. A total sample of 311 publications from Web of Science database were retrieved. Firstly, it is performed a bibliometric analysis by SciMat and VOSviewer software to visualise scientific maps about co-occurrence analysis of keywords and co-citation analysis of journals. This allows for the understanding of the knowledge structure about this field, and to detect research issues. Secondly, a systematic literature review is conducted regarding the most influential articles in years 2020 and 2021, coinciding with the most representative period under study. Thirdly, to support the development of this field it is proposed an agenda according to the research gaps identified about circular economy and food waste management. Results reveal that the main topics are related to waste valorisation, the application of waste-to-energy circular model and the anaerobic digestion process towards fossil fuels replacement. It is underlined that the use of food as a source of clean energy is receiving greater attention in the literature. There is a lack of studies about stakeholders' awareness and training. In addition, available data would facilitate the implementation of circular principles for food waste recovery, management, and valorisation. The research agenda suggests that circularity networks with suppliers and customers need to be deepened. Technological tools for the implementation of sustainable business models, and greater emphasis on social aspects through educational campaigns are also required. This paper contributes on the application of circularity to food waste management by abandoning inefficient linear models. Shedding light about trending topics in the field guiding to scholars for future research opportunities.

Keywords : bibliometric analysis, circular economy, food waste management, future research lines

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