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INSIGHTS OF BIOECONOMY: BIOPOLYMER EVALUATION BASED ON SUSTAINABILITY CRITERIA

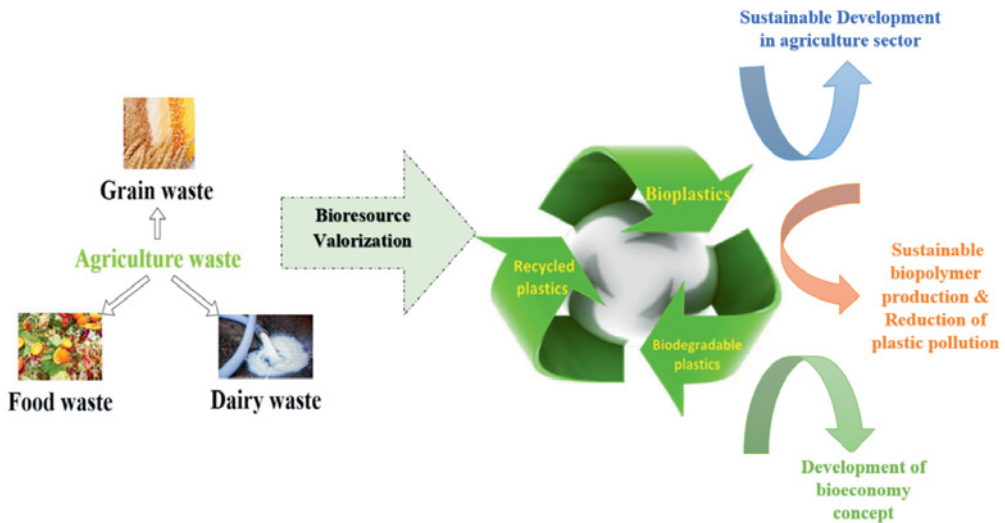
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Abstract – Sustainable development in the agriculture sector can be boosted by integrating a sustainable bioeconomy and transforming renewable resources into added-value products. There are various methods to determine, measure, and compare the extent of sustainability. We promote the bioeconomy concept by utilizing agricultural waste in biopolymers considering the sustainable development in the agriculture sector. This research aims to evaluate biopolymer alternatives based on sustainability criteria and indicators using the integrated multi-criteria decision analysis approach under the sustainability umbrella. The authors evaluated the PLA, PHA/PHB, starch, protein, and cellulose-based biopolymers. As a result, the cellulose-based biopolymer shows the best performance. The research findings provide valuable information to establish a sustainable pathway for biopolymer production for industries.

Keywords – Agriculture; AHP; biopolymer; MCDA; sustainable development



Sustainable biopolymer production.