ABSTRACT

The issue of vegetable waste in the trade sector, particularly at XYZ Vegetable Shop in Pagesangan Market, Surabaya, is a significant problem because every day this shop produces 8–10 kg of vegetable waste, which has the potential to accumulate if not managed properly. This study aims to develop a Conceptual Closed-Loop Supply Chain (CLSC) model as a solution for managing vegetable waste to create new economic value and promote environmental sustainability. The research method used was qualitative with a comparative study approach, through literature study, field observation, and interviews with shop owners. The data obtained were analyzed using SIPOC diagrams, flow diagrams, and CLSC conceptual modeling to map the flow of materials from supply, processing, to distribution of processed products. The results showed that the application of the CLSC model was able to integrate the vegetable waste management system into valuable products such as organic fertilizer, animal feed, biogas, and probiotics. The implementation of this model not only reduced the volume of waste disposed of in landfills but also opened up new economic opportunities for local businesses. In conclusion, the Conceptual CLSC can be an effective model in supporting the circular economy and environmental sustainability in the traditional vegetable trade sector.

Keywords*: Closed-Loop Supply Chain, environmental sustainability, vegetable waste, organic waste processing.*