

## Industrial Ecology Perspectives of Food Supply Chains: A Framework of Analysis

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**Abstract :** This paper introduces the theoretical and methodological basis of an analytical framework conceived with the purpose of bringing industrial ecology perspectives into the core of the underlying disciplines supporting analyses in studies concerned with environmental sustainability aspects beyond the product cycle in a supply chain. Given the pressing challenges faced by the food sector, the framework focuses upon waste minimization through industrial linkages in food supply chains. The combination of industrial ecology practice with basic LCA elements, the waste hierarchy model, and the spatial scale of industrial symbiosis allows the standardization of qualitative analyses and associated outcomes. Such standardization enables comparative analysis not only between different stages of a supply chain, but also between different supply chains. The analytical approach proposed contributes more coherently to the wider circular economy aspiration of optimizing the flow of goods to get the most out of raw materials and cuts wastes to a minimum.

**Keywords :** by-product synergy, food supply chain, industrial ecology, industrial symbiosis

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