

Institutional Food Footprint: The Impact of Food Packaging, Waste, and Transportation

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Abstract

Rising concern about the environmental impact of food transportation has led many firms to define policies and implement practices that reduce their ecological footprint. The policies and practices account for a variety of activities of the product life cycle. In order to develop and manage systems that reduce ecological impact, food retail institutions must maintain collaborative relations with suppliers, transportation and logistics providers, and waste haulers. Food has been classified as one of the top contributors to the environmental impact in society. Food transportation, broadly viewed, is a major part of that impact. The centralization of supermarket buying, the globalization and consolidation of the food industry and the increased usage of regional distribution centers have all contributed to the escalation of food transportation over the past 30 years.

The concept of ‘food miles’ has been used to compare local and global food supply systems. ‘Food miles’ can provide a relative indicator of the amount of energy or fuel used to transport from farm to store, with lower ‘food miles’ signaling lower transportation fuel usage and cost. Additionally, lower ‘food miles’ often translates to lower greenhouse gas emissions. Although strong advocacy for local food sourcing existed long before these studies were published, the results of the studies significantly increased the interest in the ecological impacts of local versus global food supply chains.

An important component of the food supply chain is the institutional food industry that provides, for example, food products to schools and hospitals. This sector requires frequent and lengthy trips by food growers and producers to hubs in a complex food distribution network that contributes significantly to global carbon dioxide emissions. Increasingly, these businesses are assessing the impact of their purchasing decisions on their carbon footprints. Carbon footprint is one way to describe or measure the carbon emissions from a specific organization or process. Purchasing decisions have complex implications for the environment based on the mode of transportation employed, packaging, and the resulting waste and disposal transportation. For example, a hospital may choose to support local farmers and purchase seasonal food products rather than purchasing from large national food suppliers whose products tend to be sourced from multiple producers around the globe. The local farmer may use a truck to service multiple customers with minimal packaging and recyclable totes, whereas the distributor tends to use long and short haul trucking with protective packaging that generates more waste and requires additional transportation to haul the waste to landfills.

The objective of the present research is to examine the environmental implications of the food purchasing decisions made by the institutional food industry, as represented by hospitals and upper level educational institutions. In this study, we assessed institutional food purchasing behavior using interviews, surveys, and modeling to evaluate the environmental implications of decisions regarding food transportation and packaging. Current purchasing practices for three popular food items, their corresponding transportation modes, packaging choices, and related food and packaging waste were assessed.