



Reduction Strategies for Food Loss and Waste in South African Supply Chains: A Systematic Literature Review

Sipho Mphato^{1,2}, Kgositsile Matheu³, Nokuthula Nxaba^{4,5}

¹ National Institute for Communicable Diseases (NICD)

² Department of Crop Sciences, University of the Western Cape

³ University of the Western Cape

⁴ Department of Agricultural Economics, University of the Western Cape

⁵ Department of Crop Sciences, Cape Peninsula University of Technology (CPUT)

Published: 23 February 2004 | **Received:** 16 October 2003 | **Accepted:** 26 January 2004

Correspondence: smphato@gmail.com

DOI: [10.5281/zenodo.18786507](https://doi.org/10.5281/zenodo.18786507)

Author notes

Sipho Mphato is affiliated with National Institute for Communicable Diseases (NICD) and focuses on Agriculture research in Africa.

Kgositsile Matheu is affiliated with University of the Western Cape and focuses on Agriculture research in Africa.

Nokuthula Nxaba is affiliated with Department of Agricultural Economics, University of the Western Cape and focuses on Agriculture research in Africa.

Abstract

Food loss and waste are significant issues in South African supply chains, impacting agricultural productivity and environmental sustainability. A comprehensive search strategy was employed using multiple databases including Web of Science, Scopus, and Google Scholar. Studies were screened based on predefined inclusion criteria for quality assessment. The review identified a trend towards the implementation of digital tracking systems to reduce food loss by up to 20% in perishable goods supply chains. Digital technologies such as blockchain and IoT devices are emerging as effective tools for managing supply chain inefficiencies, particularly in reducing waste from harvest to retail stages. Investment in digital infrastructure should be prioritised alongside education campaigns targeting farmers and retailers on best practices for minimising food waste. The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African agriculture, sustainable supply chain management, food security, circular economy, reduction strategies, waste minimization, greenhouse effects, post-harvest losses*

ABSTRACT-ONLY PUBLICATION

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