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A Framework for Vertical and Horizontal Supply Chain Integration in Cooperatives: COPAG Case

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Abstract

Agro-food supply chain integration plays a growingly important role in the stable and sustainable development of agriculture. However, it is challenging for core firms to integrate the small-scale cooperatives and scattered farmers due to complex transaction processes and volatile relationships. Agricultural co-operatives are organizations that unite farmers' power and help them achieve economic benefits. As a result, Agricultural cooperatives require constant research new methods and strategies to make their operations sustainable.
This study analyzes how COPAG, Morocco's largest dairy cooperative, leverages vertical and horizontal integration to enhance supply chain resilience, market access, and socioeconomic equity for smallholder farmers. Drawing on empirical fieldwork from previous studies, the research evaluates COPAG's dual integration model: vertically controlling milk production, processing, and distribution while horizontally partnering with smaller cooperatives to pool resources and negotiate collectively. Using mixed methods—including interviews with COPAG managers, annual reports, and policy documents—the study reveals that vertical integration reduced post-harvest losses through centralized quality control and stabilized farmer incomes via fixed-price contracts. Horizontal integration diversified revenue streams, enabling collective bargaining power and bulk procurement of inputs, which lowered costs. Membership in COPAG increased farmer incomes with smallholders transitioning to medium/large-scale operations through access to shared infrastructure and training programs.

Keywords
Agricultural cooperatives, vertical integration, horizontal integration, supply chain resilience, COPAG,

Biographies:

Akram Elkochi is a full professor and researcher at the Agadir National School of Applied Sciences (ENSA), University Ibn ZOHR in Agadir, Morocco, within the Systems Engineering and Decision Support Laboratory. His areas of expertise include Decarbonization of the Supply Chain, Sustainable Supply Chain, and Carbon Footprint.

Mariam Oufkiri is a PhD student in Supply Chain Management and Cooperatives Development at the Systems Engineering and Decision Support Laboratory, Agadir National School of Applied Sciences, University Ibn ZOHR in Agadir, Morocco. Her current research focuses on the intersection of supply chain management principles and the unique characteristics of cooperative enterprises, likely exploring areas such as sustainable supply chains within cooperative structures, performance measurement in cooperative models