

KEYNOTE

EXTENDED ABSTRACT ONLY

Resilience of agri-food supply chains: Australian developments after a decade of supply and demand shocks

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Abstract: Australian agribusiness has made a significant transition from commodity delivery to consumer-oriented value addition. Its agri-food sector is mainly export-oriented and operates at a large scale, though its considerable distances, linking production, markets, inputs, and infrastructure, make it a high-cost operator relative to international competitors. A succession of shocks to both demand and supply over the last decade has challenged the Australian agri-food supply chains in the forms of natural disasters, geopolitical maneuvering in trade policies, a pandemic, and drought. These shocks are in many cases associated with broader trends such as climate change, expanded biosecurity threats, more fickle consumer needs, and changes in labor mobility. The current concentrated retail environment creates an increasing demand to design resilient supply chains. It looks for unique ways to accommodate the Australian commercial and physical environment and farm management systems. Nonetheless, supply chain management has adhered to conventional performance metrics associated with cost and capacity utilization. In response to the sequence of shocks, digital technology has rapidly matured and provided a plethora of entirely new design options. The related research and practical applications of these technologies are dominated by improved productivity, targeting quality and quantity to the market, and logistical efficiency. These estimates refer to conditions not disturbed by the shocks outlined above, and they are heavily reliant on efficient supply chains to deliver them. That is to say, resilience in supply chains is mostly related to efficiency imperfectly and represents a trade-off between costs and redundancy, for example. Hence, this chapter focuses on aligning the definitions of agri-food supply chain resilience with management needs and highlights the potential applications of technologies and information systems in advancing resiliency. It outlines a set of shocks or challenges associated with different commodity sectors and identifies thematic benefits of resilience at varying echelons of supply chains. Several sources, including interviews with industry specialists and literature review, are used to extract potential digital solutions and discuss their impact on the resilience indicators. Results are compiled across settings and weightings, representing supply chain performance and resilience priorities to provide research-informed, practically applicable digital interventions.

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