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## Multi-layer Distribution System of the Indonesian Fruit-Vegetable Sector: Current Challenges and Future Perspectives

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### Abstract

As in the case of most of developing countries, Indonesia's agricultural sector is facing challenges that require a change of agricultural management strategy. The challenges, among others, include: consumers' demand of better quality and accessibility of agricultural products, and the increasing competition from imported agricultural products ever since the free-market policy was implemented. Such a market dynamic poses a threat for players in the Indonesian agricultural supply-chain, characterised by many intermediaries and multi-levels of business transactions within the supply chain or the so called multi-layer distribution system. This situation is especially critical for perishable products such as fruits and vegetables. Realizing the importance to establish a more resilient system, this article aims to (1) identify and observe the multi-layer distribution system, especially for the Indonesian fruit-vegetable sector, and (2) propose alternative solutions for a more effective and efficient fruit-vegetable supply-chain.

The current challenges can be summarised as follows. We observed that the distribution of fruit-vegetable from farmers to end-consumers is a multi-stage operation, typically involving at least five intermediaries, namely collectors, village/local wholesalers, agents at central markets, traditional markets and retailers such as fruit-vegetable vendors, small restaurants, and small markets. Information flow is lacking, each player seems to have information only from its direct upstream and downstream clients. Information about end-consumers' preferences, for example, will likely not reach the farmers, and hence, it hinders the farmers to quickly adapt to changing demand. There are some evidences showing the inefficiency of the supply-chain.

As future perspective, we propose some options to increase the supply-chain's efficiency: (1) contract farming and direct collaboration with modern-supply-chains players as options to shorten the length of supply-chain and to be more consumer-oriented; (2) possibility to reposition the existing cooperatives' network; (3) opportunity to strengthen farmers' bargaining power by creating producer organisations or community-based enterprise; and (4) understanding the consumers' needs better and integrating consumer-oriented policies in all supply channels. Nevertheless, the improvement of distribution systems should also be accompanied by favourable political situation and more research on the consumer side to enable upstream players to better fulfil consumer demand.

**Keywords:** Fruit-vegetable sector, Indonesia, multi-layer distribution, supply-chain