The Cold Chain of Golden Apple Snail: A Case Study

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Abstract. Cold chain management is necessary in cutting food loss and maintaining food safety in production, storage and distribution activities along the supply chain. However, the adoption of cold chain logistics in Thailand's agricultural and food sector is still underdeveloped. The supply chain of golden apple snail, an important economic animal in the Northeast, is facing problems of potential food waste and economic losses. Consequently, this study aims to analyze the supply chain operations and proposes guidelines that helps reduce food loss towards building an unbroken cold chain. A case analysis at Baan Huakwa, Kalasin, a main storage facility of golden apple snail, was selected as a starting point in snowball sampling technique for its cold chain study. Following an assessment of the current cold chain management, supply chain operations reference model (SCOR Model) and value chain were then used to systematically provide possible improvements. This specific cold chain breaks at the transport between snail farmers and storage/packaging facility. It was found that uncontrollable environments and lack of demand forecast sometimes lead to snail shortages or oversupply. Long periods of delivery and storage at improper temperatures with the use of only ice cooler and pickup tarpaulin can result in spoilage. An option of temperature-controlled truck investment is considered. Recommendations are identified for related decision makers to implement necessary changes to improve the existing cold chain system. Moreover, this study can become a reference for perishable food supply chain.

Keywords: Golden Apple Snail, Perishable Food, Cold Chain, Green Logistics, Kalasin