

**Title** Understanding Postharvest Losses in Vegetables Using an Upstream Supply Chain Approach in South East Asia

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### **Abstract**

Vegetable produce and processed products from the developing world are gaining greater importance both in domestic and international markets. However, due to the perishable nature of many vegetables, production is severely constrained by high postharvest losses, thereby making production and marketing of vegetables a relatively risky business. Yet, research in this area remains underfunded as evidenced by the scarcity of scientific papers, reliable data sources, and research initiatives examining the magnitude and reasons of postharvest losses in developing countries. Still, there is a growing concern for food quality and safety aspects, since vegetables (together with fruit) belong to the class of food items traded that are most frequently affected by sanitary and phytosanitary measures. This paper provides an overview of the postharvest loss situation of several priority vegetables along the entire supply chain in three Southeast Asian countries, namely Cambodia, Lao PDR and Viet Nam. Looking at the whole supply chain infrastructure and using an analysis of marketing margins, it quantifies the volume and value of vegetable losses from farmers to retailers, and identifies the key reasons and measures being implemented at each stage to reduce postharvest losses. The paper then offers a brief review of the preventive measures in conjunction with the main reasons enumerated per supply chain agent. Analysis of the data indicates that vegetable loss is common to most agents, and on average totals around 17 percent of the total harvest, with a value of approximately US\$ 60 per metric ton produced. Physical loss is highest for farmers, i.e. roughly twice that for middlemen and about 30 percent higher than retailers, while monetary loss is highest for retailers. Results further show that postharvest loss is highest in Cambodia, whose supply chains are more complex than Lao PDR and whose technical expertise is inferior to Viet Nam considering postharvest handling and processing of vegetables. The paper suggests putting emphasis on the development of disease control measures for farmers, and improving marketing efficiency for middlemen and retailers through product quality standards and strengthened rural-urban linkages, e.g. transport conditions, packaging and handling techniques, and market assurance.