

Opportunities for Reducing Post-Harvest Losses of Cactus Pear (*Opuntia Ficus-Indica*) to Improve Small-Holder Farmers Income in Eastern Tigray, Northern Ethiopia: Value Chain Approach

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Abstract : The production of major crops in Northern Ethiopia, especially the Tigray Region, is at subsistence level due to drought, erratic rainfall, and poor soil fertility. Since cactus pear is a drought-resistant plant, it is considered as a lifesaver fruit and a strategy for poverty reduction in a drought-affected area of the region. Despite its contribution to household income and food security in the area, the cactus pear sub-sector is experiencing many constraints with limited attention given to its post-harvest loss management. Therefore, this research was carried out to identify opportunities for reducing post-harvest losses and recommend possible strategies to reduce post-harvest losses, thereby improving production and smallholder's income. Both probability and non-probability sampling techniques were employed to collect the data. Ganta Afeshum district was selected from Eastern Tigray, and two peasant associations (Buket and Golea) were also selected from the district purposively for being potential in cactus pear production. Simple random sampling techniques were employed to survey 30 households from each of the two peasant associations, and a semi-structured questionnaire was used as a tool for data collection. Moreover, in this research 2 collectors, 2 wholesalers, 1 processor, 3 retailers, 2 consumers were interviewed; and two focus group discussion was also done with 14 key farmers using semi-structured checklist; and key informant interview with governmental and non-governmental organizations were interviewed to gather more information about the cactus pear production, post-harvest losses, the strategies used to reduce the post-harvest losses and suggestions to improve the post-harvest management. To enter and analyze the quantitative data, SPSS version 20 was used, whereas MS-word were used to transcribe the qualitative data. The data were presented using frequency and descriptive tables and graphs. The data analysis was also done using a chain map, correlations, stakeholder matrix, and gross margin. Mean comparisons like ANOVA and t-test between variables were used. The analysis result shows that the present cactus pear value chain involves main actors and supporters. However, there is inadequate information flow and informal market linkages among actors in the cactus pear value chain. The farmer's gross margin is higher when they sell to the processor than sell to collectors. The significant postharvest loss in the cactus pear value chain is at the producer level, followed by wholesalers and retailers. The maximum and minimum volume of post-harvest losses at the producer level is 4212 and 240 kgs per season. The post-harvest loss was caused by limited farmers skill on-farm management and harvesting, low market price, limited market information, absence of producer organization, poor post-harvest handling, absence of cold storage, absence of collection centers, poor infrastructure, inadequate credit access, using traditional transportation system, absence of quality control, illegal traders, inadequate research and extension services and using inappropriate packaging material. Therefore, some of the recommendations were providing adequate practical training, forming producer organizations, and constructing collection centers.

Keywords : cactus pear, post-harvest losses, profit margin, value-chain

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