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Boosting Sri Lanka's Tea Exports: Applying Lean Six Sigma for Enhanced Quality

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The current economic crisis has intensified the demand for foreign exchange. Given its established presence, the tea industry holds the potential to boost foreign exchange earnings. This paper presents a case study on implementing Lean Six Sigma techniques to enhance tea quality for high-end international markets, aiming to increase direct exports from 5% to 30%. The project succeeded, surpassing the target, with exports reaching 37.2% and revenue increasing by Rs. 148.4 million. A Pareto analysis identified unacceptable liquor quality as the primary defect affecting market acceptance. A cause-and-effect diagram pinpointed the causes of low-quality liquor. A strong positive correlation (r = 0.813) was found between the percentage of fermented leaves and sample rejection. Issues such as leaf fermentation and damage, burnt tea, high crude fiber, withering problems, and colour discrepancies were recorded as the causes of tea sample rejection. After the introduction of the new measures, the Process Capability Index (Cpk) increased from 0.02 to 1.37. Implemented solutions included using plastic crates and lorries for leaf collection, introducing crate caps, installing a temperature-recording system, setting night alarms every two hours, assigning nightly camera checks, implementing a mister system, and reducing unnecessary handling during shifting.

Keywords: *Lean Six Sigma, tea quality improvement, increasing process capability, tea direct exports*