

ABSTRACT

An Economic Analysis Of The Location Of
Cocoa Fermentaries In Trinidad

Margaret Kalloo

The production of good quality fine/flavour cocoa is a function of post harvest processing. Good quality fine/flavour beans from Trinidad and Tobago fetch a premium on the world market, where the country enjoys a niche market status. The lack of ideal facilities, high labour cost, sub-optimal quantities processed and variations in the post harvest processing methods and techniques employed on small farms in Trinidad and Tobago, all contribute to cocoa beans that are not of the highest standard. In the short run, this poorer quality means a loss of income to the farm enterprise and a loss of scarce foreign exchange to the country. In the long run, the niche market status presently enjoyed by Trinidad and Tobago may cease to exist. Improved quality may be achieved through the establishment of fermentaries, where processing facilities, methods and techniques can be standardized. Post harvest processes can be monitored and controlled so that the production of good quality beans can be maximised.

This thesis investigates the optimum number, size and strategic location of these facilities that are necessary to process the total volume of wet beans from small farms in Trinidad, at the least total cost. The study also evaluates the

viability and worth of an investment in strategically located fermentaries of optimum size.

An integer linear programming model is used to provide the answers of how many, what size and where the fermentaries should be located, while the technique of Benefit Cost Analysis is used to determine the worth of the investment.

The results of the study show that five fermentaries each with a capacity to process approximately 5,897 kg wet beans per day, can adequately process the annual volume of wet beans produced by the small farms. The five sites are in the towns of Biche, Sangre Grande, Moruga, Rio Claro and Tabaquite. The approximate capital cost of each fermentary is \$TT 945,667. The Net Present Values were found to be positive and the Internal Rate of Returns range from 17-24% in the financial analysis. The pay back period ranged from 4-6 years. The economic analysis showed positive Net Present Values and Internal Rate of Returns ranging from 69-80%.

The study concludes that strategically located fermentaries provide a financially viable alternative to the existing production and marketing system for fermented dry cocoa beans in Trinidad.