A Test for Relative Efficiency in the Smallholder Tea Sub-sector in Kenya

Abstract:

Despite availability of tea growing technologies to all Kenya tea farmers, green leaf production in smallholder sub-sector remains low. Tea in Kenya is grown in the East of the Rift Valley and the West of the Rift Valley regions. It is assumed that tea farms behave according to a certain decision rule termed as profit maximization. The objective of this study was to estimate the profit function for tea farms in the two regions and to compare/test the relative economic efficiency between them. A profit function model was fitted on 212 smallholder farms. The dependent variable was gross margin per farm per year. The independent variables were: number of tea bushes per farm per year, cost of fertilizer (Kshs.) per hectare per year, labour wage rate (Kshs.) per man-day in each farm and a dummy variable where D=1 for east Rift and D=0 for west Rift. The results depicted that the coefficients of the number of bushes, fertilizer cost/ha/year and labour wage rate/man-day were all positive and significant at 1 percent level. It had been hypothesized that there is no efficiency difference between East of the Rift Valley and West of the Rift Valley in tea production. Hence the coefficient of the region dummy would be zero. The results rejected the hypothesis of equal efficiency between the two regions at 10 percent level. Further more, the positive sign of the dummy variable indicates that East Rift Valley tea farms are more economic efficient, at all observed prices of the variable inputs given the distribution of the fixed factors of production. It is concluded that East Rift Valley is more successful in responding to the set of prices it faces (Price efficiency) and/or has higher quantities of fixed factors of production including entrepreneur ship (technical efficiency).