F 263

Supply Response Analysis in coconut production

Estimation of supply response is obvious for agricultural price and income policy. The product price, and input costs are important in determining the level of production of a commodity. The objective of this study was to determine the supply response of coconuts against major influencing variables.

The perennial crops provide challenges in estimating long term supply responses, with routine methods. The development of partial adjustment models solved many of the problems encountered in such studies, which is used in this study as well. This Present study examines the responsiveness of coconut production to changes in product prices, input prices and weather variables using time series data from 1970 to 2000. The biological nature of the crop identifies different time lags between dependent and independent variables. Therefore the econometric model was specified based on past research evidences as $Y_t = f (Pn_{t-1}, Pf_{t-2}, Fuse_{t-2}, RF_{t-1}, Y_{t-1,} u_i)$, where, Y_t = total coconut production, Pf_{t-2}, $Fuse_{t-2}$, RF_{t-1}, $Y_{t-1,}$ lagged variable of real prices of coconuts, coconut fertilizer, fertilizer use on coconut and rainfall. Y_{t-1} is the lagged dependent variable to represent all the previous adjustments to price changes and, random u_i error.

The estimated model provides good statistical insight with R2=0.905 and the coefficients consistent with economic theory. The coefficients for price and rainfall are significant at 5% level while the coefficients for fertilizer price and fertilizer use were not significant. This may due to the fact, that only 25% of the growers are recorded to use fertilizer as input in coconut and this has no significant impact on total nut production. The elasticities for short run and long run (values in Parentheses) with respect to nut price, fertilizer price and fertilizer use were 0.19 (0.3),-0.04 (-0.06), and 0.09 (0.14) respectively. Elasticity of production for rainfall is 0.65. The results indicate that the coconut producers are less responsive to output prices both in short and long run. As well known, the rainfall has a remarkable contribution on total coconut production

Therefore, policies regarding the changes in output price or variable input prices may have marginal impacts to boost the current coconut production in the short run, unless great changes are made.