PRICE BEHAVIOUR OF COMMONLY GROWN VEGETABLES IN ANURADHAPURA

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Next to rice, vegetable is the most important commodity group in Sri Lanka and is always subjected to uncontrollable price fluctuations. Anuradhapura is one of the districts, which contribute immensely to the production of low-country vegetables. However, no published research on the price behavior of vegetables in Anuradhapura district is available, despite its significant impact. Therefore, this research aims to identify the price behavior and price determinants of commonly grown vegetables in Anuradhapura district. For that, time series analysis using the ARIMA model was done. Most frequently grown five vegetables in Anuradhapura district namely, Pumpkin, Brinjal, Okra, Luffa and Bittergourd were included in the study. Weekly nominal prices from January 2007 to December 2016 and primary data were obtained through a field survey (100 farmers and 50 traders selected using a stratified random sampling method). Results revealed that, both nominal and real prices were increasing over time indicating the prevalence of a seasonality effect. Highest price fluctuations were observed in January and lowest in September. The best forecasting ARIMA models were; Pumpkin ARIMA $(2,1,54)^1$ $(0,1,52)^{52}$, brinjal ARIMA $(0,1,[3,4])^1$ $(0,1,52)^{52}$.Okra ARIMA $([46,55,98],1,[2,34,54])^1$ $(0,1,52)^{52}$.Luffa ARIMA $(0,1,[2,51,55])^1$ $(0,1,52)^{52}$.Bitter gourd ARIMA $(0,1,55)^1$ $(1,1,52)^{52}$. Models were validated and future prices for the year 2018 were forecasted. Fluctuations were ranged from a maximum of 42.88% (Brinjal) to a minimum of -8.76% (Okra). Descriptive analysis revealed that, the impact of adverse weather and lack of market information were the causal factors of price fluctuations which can be solved via efficient market information dissemination system, crop zoning and planning. Based on the above analyses it is possible to state that policy implementations can be done to minimize price fluctuations of commonly grown vegetables in the Anuradhapura district.

Keywords: ARIMA model, Price fluctuation, Price forecasting, Time series analyses, Vegetable prices