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## BOOK OF ABSTRACTS

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# Modelling the Relationship between Tea Production and Tea Replanting Subsidy in Sri Lanka: An ARDL Approach

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The tea industry in Sri Lanka plays a vital role in the economy with its massive contribution to direct and indirect employment, export earnings, etc. In Sri Lanka tea small holding sector (TSH) contributes almost 60 percent of the total tea extent and provide nearly 73 percent of the total tea production. Tea is a perennial crop and it produces economical harvest up to 20 years of the plantations. Also studies revealed that 88 percent of TSH plantations are above 20 years old. Therefore, it is essential to do replanting and government has estimated this figure as 2 percent of the total tea extent of the tea small holding sector annually. Introduction of subsidy schemes for tea sector is the most important programme implemented by Sri Lankan government to promote tea replanting. The motivation for this research is none availability of comprehensive quantitative studies which were done to investigate and quantify the tea replanting subsidy scheme on tea production that pertaining to geographic elevation of tea cultivating lands. Since literature identified tea prices, cost of production and tea land are the main effective factors on tea production, in this study those factors are considered as controlling variables. Therefore, the main objective of this study is to examine the relationship between tea replanting subsidy scheme on elevation-wise tea production in short run and long run while controlling tea prices, cost of production and tea land. The time series data considering black tea for High, Medium, and Low elevations were collected from 1970 to 2014. ADF and Ng and Perron(2001) test were used to examine the unit root properties. Autoregressive distributed lag (ARDL) bound testing approach is used to examine the existence of co-integration among variables. Separate models were developed for three geographical elevations. Reliability of the ARDL models were examined by applying series of stability tests such as serial correlation, normality, heteroscedasticity and Cumulative Sum of recursive residuals. The results of the unit root test indicate that all the variables are stationary at  $I(0)$  or  $I(1)$ . ARDL bound testing revealed that the tea production is co-integrated with four variables such as subsidy, cost, land and tea price in long run for all three elevations, implying that they will move together. Also results provided negative and significant error correction term for all three elevations indicating that any disequilibrium in the model of tea production will get corrected with the rate of adjustment of 84%, 15%, 37% on annual basis for high grown, medium grown and for low grown respectively. Results reveals that the tea replanting subsidy will not show significant impact on tea production in all three elevations. When comparing long run coefficients for three elevations, only average tea prices, cost of production and tea land of high grown show significant impact on tea production. In short run analysis, cost of production is significant for only high elevation and low elevation. In addition, previous cost of production is effective for tea production significantly in low elevation.

**Keywords:** ARDL Approach, Cost of Production, Tea Production, Tea Replanting Subsidy