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ANALYSIS OF THE FACTORS AFFECTING THE REPLANTING DECISION BY TEA SMALLHOLDERS IN YATINUWARA DIVISIONAL SECRETARIAT DIVISION

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INTRODUCTION

Tea is pre-eminent among Sri Lanka's plantation crops and it is one of the most important industries in the country in terms of employment and foreign exchange earnings (Basnayake, 2002). Tea industry in Sri Lanka can be categorized into 2 sectors based on the land extent cultivated. Lands which are more than 50 acres belong to the estate sector and lands which are between 20 perches and 50 acres under private ownership are considered as smallholdings (Dharmasena, 2005).

Though the plantation estate sector is rather stagnated, the smallholding sector has performed better during the past few decades (Basnayake, 2002). Despite its superiority in numerous ways to the plantation sector, the smallholding sector is not free from problems (Cameron and Wickramasinghe, 2003).

In conformity to national policy, 2% of the existing tea extent has to be annually replanted in order to maintain the tea extent obtaining the maximum yield. However, annual replanting rate in the tea smallholdings sector is 0.8% (TSHDA, 2008). The current replanting rate of less than 1% is not sufficient to maintain the yield and, if disregarded, will have serious implications to overall tea productivity of the subsector and country's competitiveness versus other tea producing countries (ADB, 2009).

The low levels of decision making on replanting in tea smallholdings may be a factor responsible for not reaching desirable replanting rate. Therefore this study was carried out with the following objectives.

1. To find the factors affecting the replanting decision by tea smallholders and to identify the relative importance of each component

2. To identify possible policy implications to increase the replanting rate as per need of national requirement

METHODOLOGY

For this research a stratified random sample of tea smallholdings were selected from Gannoruwa, Manikdiwele and Dhanthure, the 3 tea inspector ranges of Yatinuwara Divisional Secretariat Division in Kandy District. 19 tea small holders from Gannoruwa, 16 tea small holders from Danthure and 25 tea small holders from Manikdiwela were selected for the sample and the sample size was 60. Selected sample represent 10% of the population. A field survey was conducted. Primary data comprised of empirical information drawn through a detailed, pre-tested questionnaire. Secondary data for the study was gathered from the previous research, survey reports and records maintained at the regional office at Gannoruwa. Data analysis was done mainly by using regression analysis.

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RESULTS AND DISCUSSION

In this study, econometric analysis was used to prove general objective quantitatively. The estimated model using Ordinary Least Squared (OLS) method is as follows.

Model specification:

$$PLAFR = 173.26 + 0.00018^{**}RS - 0.12AGE - 5.20^{**}TLS - 1.92^{**}PRICE - 9.78^{**}COR + 16.00^{*}LA + 10.80^{**}CF + 22.08^{***}OIS$$

* 10% *Significant level* ** 5% *Significant level* *** 1% *Significant level*

PLAFR = Percentage of land allocated for replanting

RS	= Replanting Subsidy	COR	= Cost of replanting
AGE	= Age of tea small holder	LA	= Labour availability
TLS	= Tea land size	CF	= Credit facilities
PRICE	= Price of green leaves	OIS	= Other income sources

Number of observations = 60 $R^2 = 0.7642$ Probability > F = 0.000

In this study, replanting decision represented by the percentage of land allocated for replanting by tea small holders. The R^2 value of the linear function suggests that 76.42% of the variation of the replanting decision by tea small holders is explained by the explanatory variables in the function. The other 23.58% of the variation can be attributed to the variation of the tea smallholders in respect to the other variables such as other management practices, climate and weather, *etc.* Moreover the model is significant at 1% significant level, the idea can be visualize by considering the probability value of the model (probability < 0.001).

Regression coefficient for the availability of income sources other than tea is significant at 1% level. Therefore it has an impact on the replanting decision. And also there is a positive relationship between availability of income sources other than tea and replanting decision. This could be related with the existence of other income generation sources, tea smallholders tend to replant their tea land because their future revenue is secured.

There is a positive relationship between replanting subsidy and replanting decision and this relationship is significant at 5% level. Furthermore it implies that one unit increase in replanting subsidy leads to increase replanting decision by 0.00018 units when all other things remain constant. This has been further proved by a study done by Hettiarachchi (1996), that replanting subsidy has an effect for the replanting decision. This implies that replanting subsidy plays a significant role in making replanting decision by tea smallholders.

Another negative and significant coefficient can be observed in the cost of replanting. With one unit increase in the cost of replanting, land allocated for replanting by tea small holders will reduce by 9.78 units when other factors remain constant. Cost of replanting is a main concern when making replanting decision (Seem, 2008 and Laucer, 2002).

Average price received for green tea leaves considered in the model is also a negatively related significant factor in this study. With one unit increment in price of green tea leaves, percentage of land allocated for replanting will decrease by 1.92 units. Edirisinghe *et al.* (2005), Brennan *et al.* (2009), Francois (2000) and Shively (1998) also reported that one of the major variables that affect the replanting decision by farmers is the price of the commodity.

Another main determinant in making a replanting decision is the availability of labor (Thang *et al*, 2009). But the regression coefficient for labour availability is insignificant at 5% level in our study. Labor availability is significant only at 10% level and it has a positive relationship with

replanting decision at this level. This implies that tea smallholders are not highly concerned on labour availability, because most of them depend on family labour.

Credit facilities also play a major role in making replanting decision. It is explained by the coefficient of the availability of credit facilities at 5% significant level. It also has a positive relationship with replanting decision. This is due to the fact that, normally tea smallholders cover the cost of replanting by farmer's own capital, credit and replanting subsidy. They tend to replant if they have more accessibility to credit. Most tea small holders were having negative opinions about credit facilities. This fact has demonstrated in the model of ecological capital management system (modified by Shanmugarathnam, 1995).

Tea land size considered in the model is a negatively related significant factor in the study. The tea smallholders who have large tea lands need huge capital for replanting than the tea smallholders those have small tea lands. When the tea land size becomes large they need to spend high cost for replanting. Same fact has been stated by Hettiarachchi (1996), in the model of ecological capital management system, pointing out that, land size affects for long term investment decision to replant.

CONCLUSIONS

According to the results obtained from the regression analysis following conclusions were made.

- Farmers tend to replant more, when they have income sources other than tea.
- Replanting subsidy is one of the major factors affecting on replanting decision.
- With the availability of credit facilities, tea small holders show a high tendency to make replanting decision.
- Tea smallholders do not like to replant if they receive high prices for green tea leaves.
- Cost of replanting also influences when making the decision on replanting by tea small holders.
- Smaller the extent of tea lands, higher the willingness to replant.
- Tea smallholders are not highly concerned about labour availability when making replanting decision.

POLICY IMPLICATIONS AND RECOMMENDATIONS

Tea smallholders should be made aware about off-farm income generation sources. Farmers should be motivated to practice intercropping which will lead to generate additional income.

It would be beneficial to increase replanting subsidy at least to cover 50% of the replanting cost. Also, by reducing the land size ceiling on replanting permits, farmers with small land size can be motivated for replanting.

Removing current constraints of obtaining replanting subsidy, will make replanting, a cost effective operation for improving the medium and long term productivity of tea lands (Most smallholders do not have the capital to commence work, as subsidy installments are paid on the basis of work done).

Tea smallholders should be encouraged to obtain replanting subsidy as it is one element to cover the cost of replanting. The gap between the replanting cost and the subsidy element could be met by the credit provided at a low interest rate and also accessibility of tea small holders to credit should be improved.

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