

**Are the Low-Country RPC Tea Estates Deteriorating?:
An Analysis of Affiliated Factors**

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ABSTRACT

The Low grown tea contributes significantly to the national tea production in Sri Lanka. The average productivity in most of the Regional Plantation Company (RPC) estates in the Low-Country are comparatively lesser than that of the RPC estates in the Up-Country, indicating a sign of yield declining in the Low-Country tea estates. The present study contributes for establishing the yield trends in the RPC sector in Low-Country tea growing districts. Furthermore, the contribution of revenue extent and the replanting rate towards the outcome of the RPC estate were also investigated by collecting the data from estate records for the last ten-year period. Results revealed that a declining trend in total tea production and average tea yield of estates in the region. The total tea production and the average yield have been decreased by 36% and 13%, respectively, in Ratnapura district, whereas the drop of total tea production in Kegalle district was 24 % during last ten-year period. The decline in total production and the average yield in Matara and Galle districts were 32%, 26%, and 45%, 7%, respectively. If this trend continues, majority of the estates in the districts under review would be running at lost after five-year period. The results revealed that substantial reduction (21.7%) of tea extent in the RPC sector in Low-Country and a low rate of replanting in almost all the districts in the period under review.

Keywords: Low-Country, replanting rate, tea extent RPC, yield decline

INTRODUCTION

The contribution of the low grown tea to the tea industry of Sri Lanka is substantial in terms of tea production, productivity, area under tea and livelihood of the people in the area. About 60 % of the total tea production of Sri Lanka comes from Low-Country tea lands (Anon, 2015). Based on the elevation, tea growing area of Sri Lanka can be divided into three categories, namely, Low-Country, Mid-Country and Up-Country. Of these three, the Low-Country becomes the largest tea growing area. The tea growing areas below 600 m amsl are considered as Low-Country.

In terms of size of the holding, three main segments can be identified in any of the above tea growing regions. They are Smallholders (who owned less than 10 acres of land), Proprietary estates (land size in between 10 - 50 acres) and corporate sector tea estates (total extent of the land is over 50 acres). The corporate sector estates are presently managed by different Regional Plantation Companies (RPC) and in the Low-Country region they have been spread over five administrative districts, such as Ratnapura, Kegalle, Galle, Matara and Kalutara. Of these three segments, the RPC sector can be considered as structurally and functionally most organized sector and therefore, this sector has a greater potential to contribute to the industry more vibrantly than what they performed today.

The environmental factors in Low-country, such as rainfall, temperature, sunshine hours, wind velocity and humidity are generally favorable for growing tea. However, several studies have revealed that the average tea yield of most of the Low-Country RPC estates is comparatively lower than that of the estates in the Up-Country (Anon, 2003; Samansiri *et al.*, 2011). In contrast, a completely different scenario could be seen in

the smallholding sector, where low-country holdings show higher yields than those of upcountry holdings (Anon, 2005). This disparity between RPC estates and the smallholdings may have occurred due to the reduction of yield in Low-Country RPC tea estates. Moreover, the recent tea production statistics show a stagnating and gradual declining trend in the contribution made by Low-Country tea estates to the national tea production (Anon, 2013-2016).

Therefore, the present study was undertaken with a general objective of investigating to examine the fate of Low-Country RPC estates in future. The specific objectives of this study are as follows;

- To establish the yield trends in RPC tea estates in Low-Country tea growing districts
- To investigate the changes of the tea extent in the in Low-Country tea growing districts
- To examine the present status of replanting of tea in tea growing districts under reference.
- To make suggestions for improving yield in Low-country tea estates.

METHODOLOGY

Data were collected from all most all the RPC estates¹ in Low-Country tea growing region, coming under WL 1a, WL 2a, WM1b, WM 1a and IM 1a Agro-Ecological Regions (AERs) in aforementioned five administrative districts namely Ratnapura, Kegalle, Galle, Matara and Kalutara. Table 01 shows that no. of RPC estates available in the Low-Country region and the number of estates covered in the survey.

¹ Excluding one estate known as Andapana Estate in Matara district

Table 1. RPC estates covered in the study

District	No. of Tea Estates	
	Available RPC estates ²	Covered estates in the study
Ratnapura	38	38
Kegalle	18	18
Galle	11	11
Matara	11	10
Kalutara	10	10
Total	88	87

Data with respect to the total production, average yield, revenue extent and replanted tea extent were extracted from the office records over the ten-year period, since 2007 using the structured format.

The collected yield data were plotted and best fitted line/curves were obtained to examine the yield trends over the last ten-year period on the basis of AERs. Further, behavior of the revenue tea extent and replanting rate were assessed using descriptive statistics.

RESULTS AND DISCUSSION

1. Tea production

Total production and average production over the last ten years of the RPC estates in each district were plotted separately (For ethical reasons the estate names are not stated). Owing to having large number of estates and divers agro-climatic conditions in Ratnapura and Kegalle districts, yield pattern has been expressed on the basis of AERs.

Tea Production Trends in Ratnapura District

Graphical expression of behavior of made tea (MT) yield in RPC estates in Ratnapura district is given in the Figures 1-7. Each line represents tea production of different estates in the respective AER. These figures showed the declining trend in total tea production over the last ten-year period.

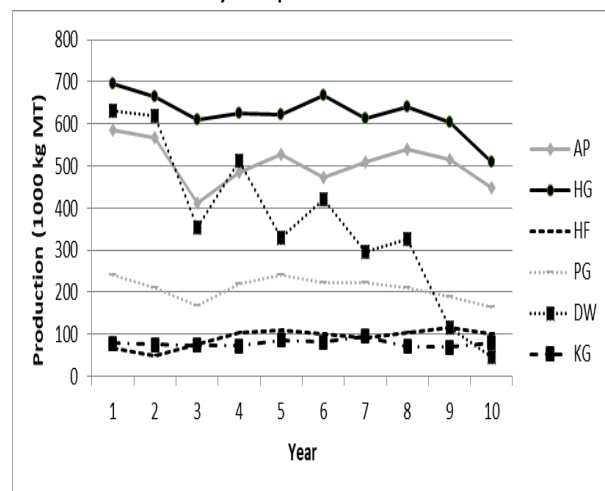


Figure 1. Tea production pattern in RPC estates which are over 75 ha in extent in WL 1a AER in Ratnapura district

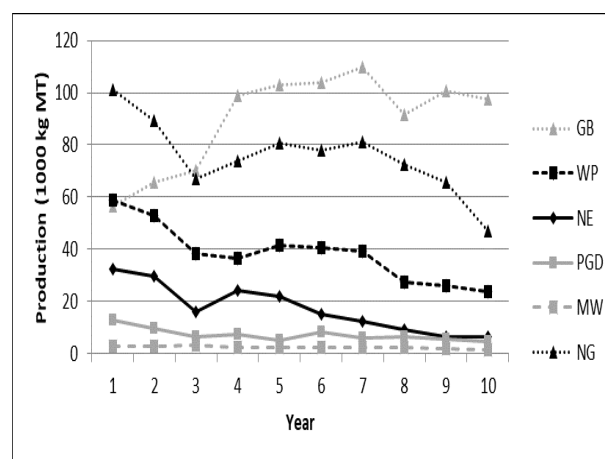


Figure 2. Tea production pattern in RPC estates which are less than 75 ha in extent in WL 1a AER in Ratnapura district.

² Source: Agronomic profile of the corporate sector tea plantations in Sri Lanka: Appendix 1 (Page 86-93)

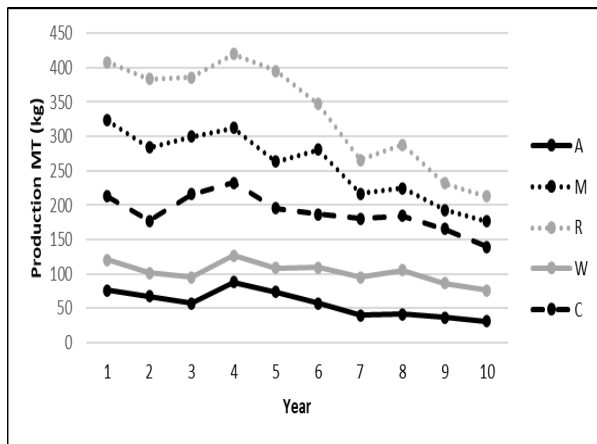


Figure 3. Tea production pattern in some RPC estates in WM 1b AER (Malaboda-Pallegoda–Dodangoda-Homagama soil complex) in Ratnapura district

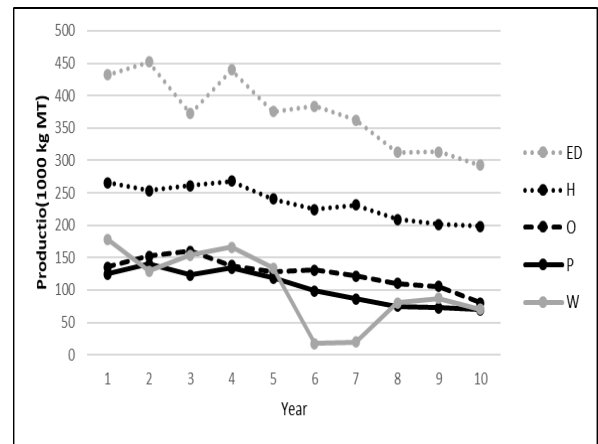


Figure 6. Tea production pattern in RPC estates which are over 150 ha in extent in WL 2a AER in Ratnapura district

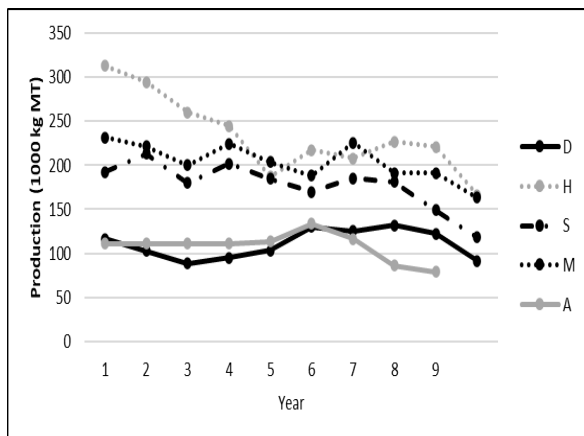


Figure 4. Total tea production pattern in RPC estates in WM 1b AER (Malaboda-Weddagala-Homagama soil Complex) in Ratnapura district

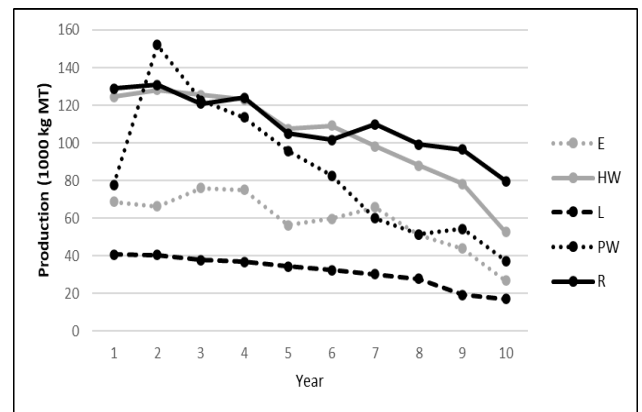


Figure 7. Tea production pattern in RPC estates which are less than 150 ha in extent in WL 2a AER in Ratnapura district

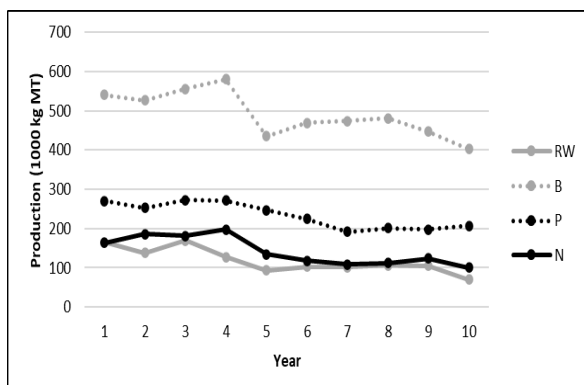


Figure 5. Tea production pattern in RPC estates in IM 2a AER in Ratnapura district

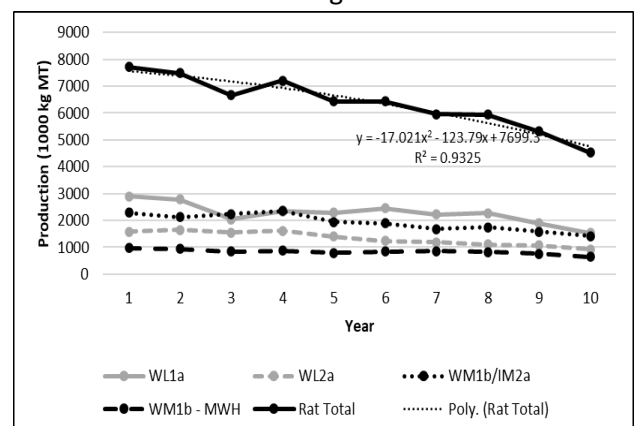


Figure 8. Trend in total tea production in Ratnapura district

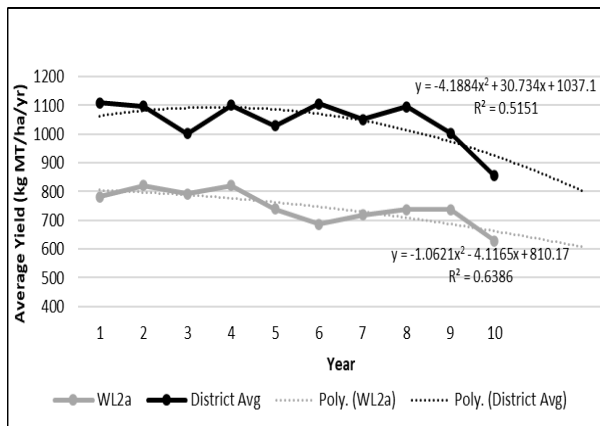


Figure 9. Average tea Yield (Productivity) in Ratnapura district

Figures 7 and 8 show a decreasing trend in total tea production and average yield in corporate sector in Ratnapura district. The trend lines indicate that total tea production and average productivity have been dropped by 36% ($R^2 = 0.93$) and 15% ($R^2 = 0.51$) respectively over the last ten-year period since 2007. Of the four AERs studied (WL1a, WL2a, WM1b and IM2a) in Ratnapura district, the highest drop in productivity was reported WL2a region which was estimated as 17% ($R^2 = 0.64$).

Tea Production Trends in Kegalle District

Production trends in RPC estates in Kegalle district are illustrated in the Figures 10 - 13 and most of the estates are witnessing the decreasing trends in Kegalle district too.

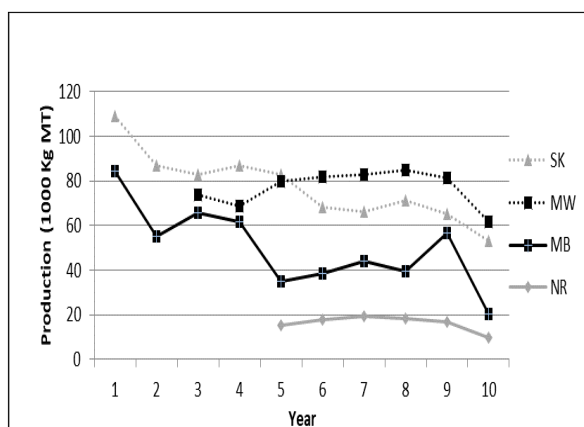


Figure 10. Tea production pattern in RPC estates in WM1a AER in Kegalle district

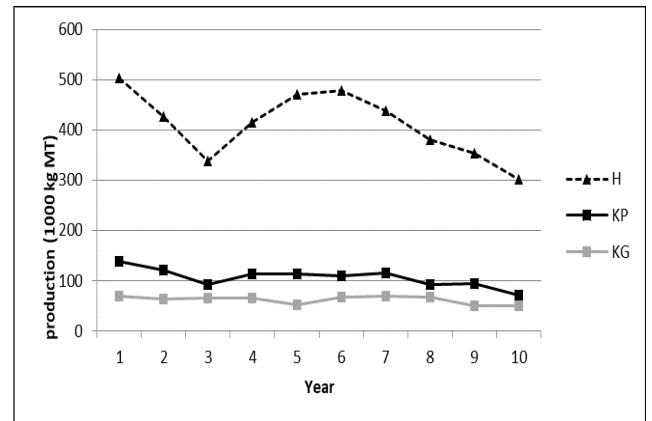


Figure 11. Tea production pattern in RPC estates which are over 50 ha in extent in WL1a AER in Kegalle district

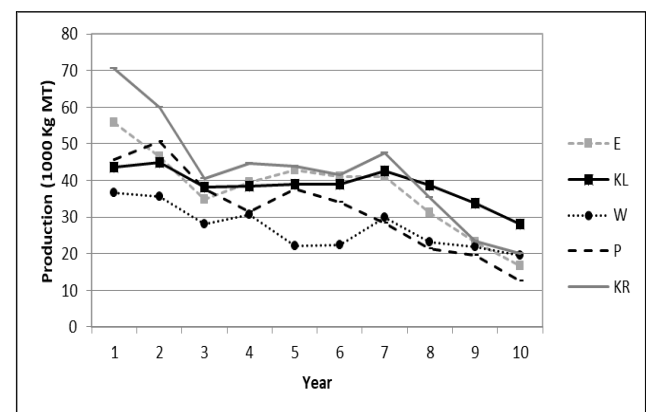


Figure 12. Total tea production pattern in RPC estates which are less than 50 ha in extent in WL1a AER in Kegalle district

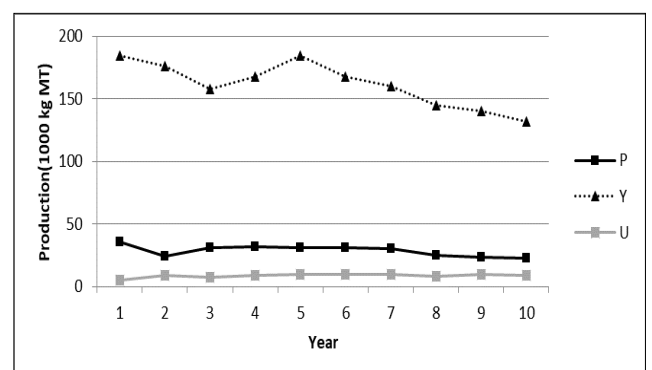


Figure 13. Total tea production pattern in RPC estates in WL2a AER in Kegalle district

It was clearly indicated that the tea production has come down in Kegalle district and the trend line suggested 24% drop during the last ten-year period (Figure 14).

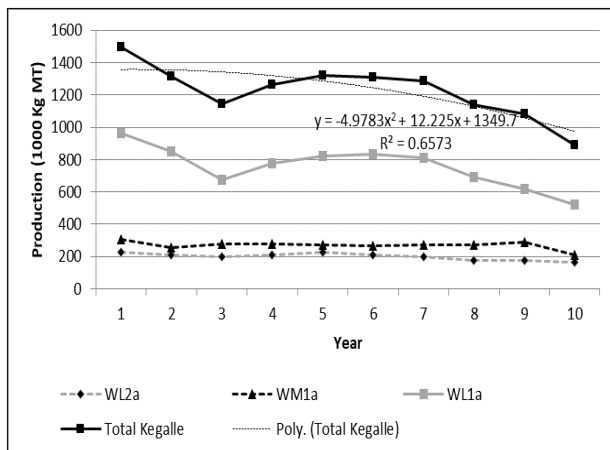


Figure 14. Tea production trends in RPC sector in different regions in Kegalle district

Figure 15 shows the average tea yield (productivity) over the last six-year period in RPC sector in Kegalle district. A 19 % reduction of average yield was reported in Kegalle district during the same period.

Tea Production Trends in Matara District

The pattern of tea production in the RPC estates in Matara district are given in the Figures 15 and 16. These graphs indicated that majority of estates in Matara showed a declining trend in terms of both production and productivity of tea.

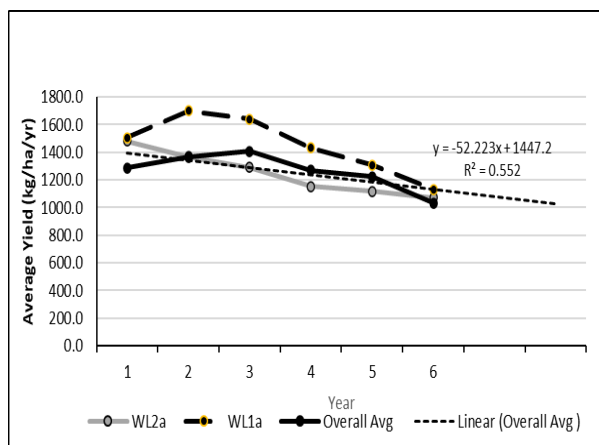


Figure 15. Average tea yield (productivity) trend in RPC sector in Kegalle district

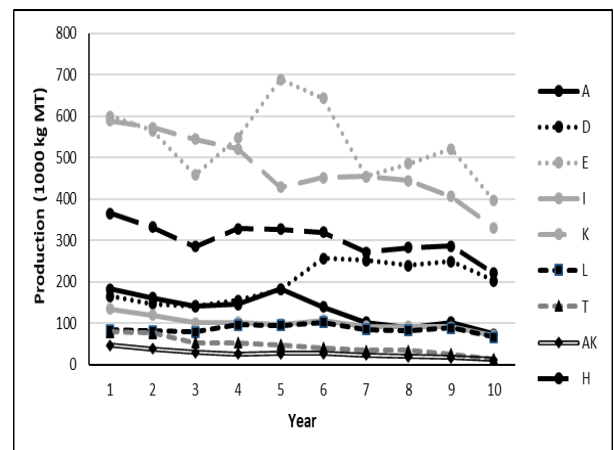


Figure 16. Tea production pattern of RPC estates in Matara district

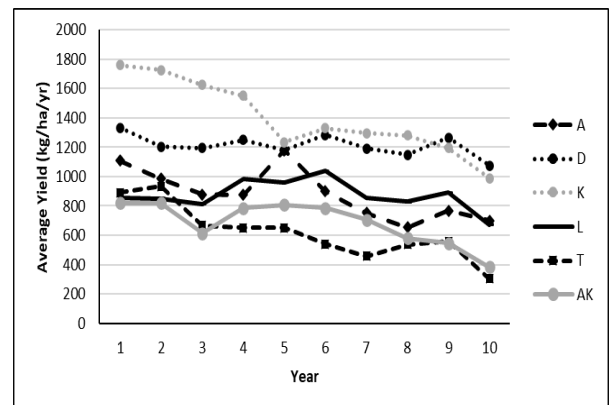


Figure 17. Tea productivity pattern of RPC estates in Matara district

According to the figures 18 and 19, the reduction of tea production and average yield in Matara district for the period under review were 32 % and 26 % respectively.

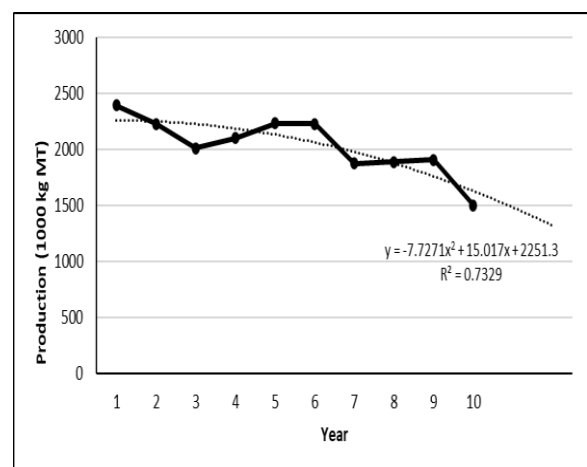


Figure 18. Average tea production trend of RPC sector in Matara district

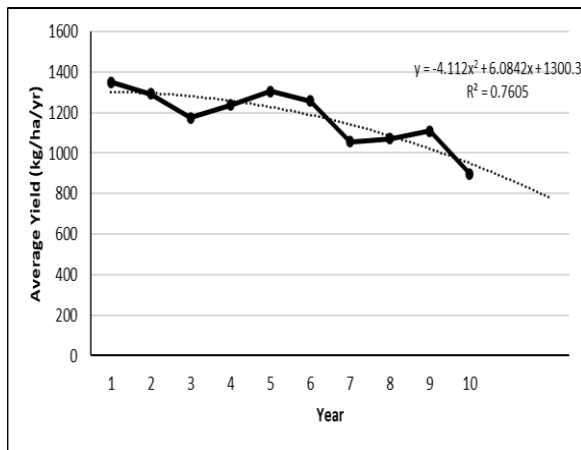


Figure 19. Average tea yield (productivity) trend of RPC sector in Matara district

Figures 20 and 21 also revealed that the total tea production and average yield of RPC estates in Galle district were also showing declining trend. Although, the total tea production of Galle district in the RPC sector was dropped by 45% over the last ten-year period (Figure 20). However, this drop has not been adequately reflected in the average productivity which showed only 7% reduction (Figure 21). This was possibly due to the adjustments made in the revenue extent which will be discussed separately. Moreover, Figure 21 showed that there was 11 % drop of total tea production in the RPC sector in Kalutara district too.

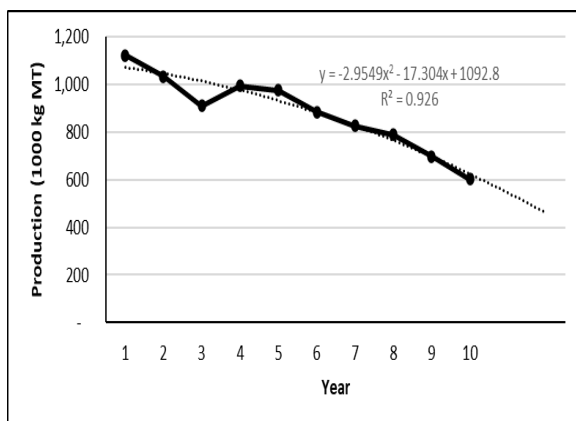


Figure 20. Total tea production trend of RPC sector in Galle district

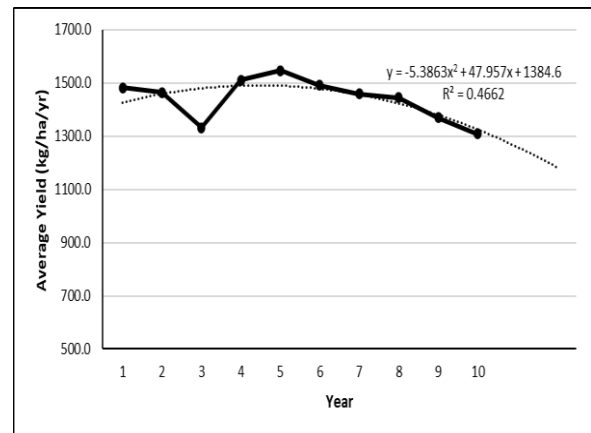


Figure 21. Average tea yield (productivity) trend of RPC sector in Galle district

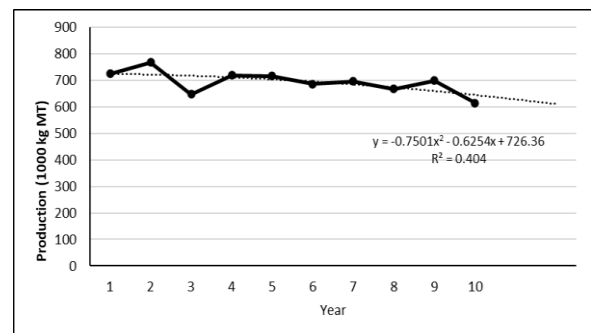


Figure 22. Total tea production trend of RPC sector in Kalutara district

Finally, it could be established the fact that majority of the Low-Country tea estates managed by Regional Plantation Companies in all the districts have experienced declining trends in yield.

Moreover, if this situation continues in the same manner, productivity of the estates would further be dropped and as such, the average yield of RPC estates in another five years' time (that is in year 2021), can be estimated using the respective equations (derived from the trend lines) would be as in the Table 02.

Table 2. Estimated average yield of RPC estate in 2021 in respective districts

District	Ratnapura	Kegalle	Galle	Matara	Kalutara
Average Yield (MT kg/ha/year)	556.1	872.75	892.04	466.36	1157.76

The breakeven yield for tea was estimated as 1000 kg/ha, when NSA is around Rs 500/kg (Shyamalie, 2012) in RPC estates and hence majority of estates in Ratnapura, Kegalle, Galle and Matara will be running at lost and that will not be a favorable condition.

2. Revenue Tea extent

The changing pattern of the tea extents was studied and illustrated in the Figures 23 and 24.

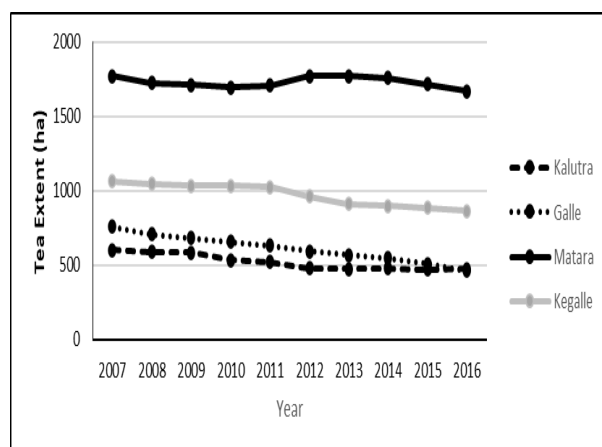


Figure 23. Changes in revenue tea extent in Kalutara, Galle, Matara and Kegalle districts.

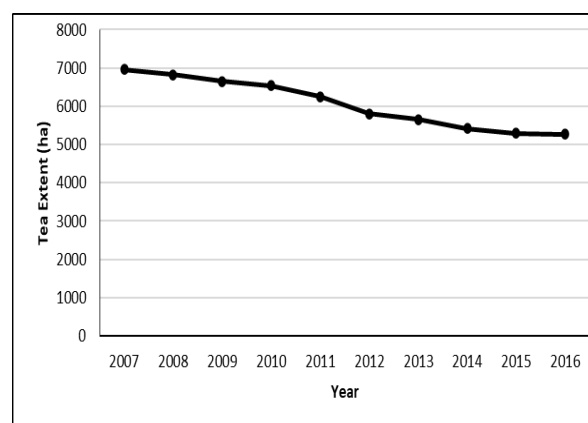


Figure 24. Changes in revenue tea extent in Ratnapura district.

These two graphs (Figures 22 and 23) clearly revealed that total revenue tea extent of RPC sector in respective districts has been decreased over the last ten-year period. The highest drop of revenue extent was recorded in Galle district, while least drop in tea extent was seen in Matara district. There were substantial reduction in tea extent in almost all the other districts which is given in the Table 03.

Table 3. Percentage drop in revenue tea extent in RPC sector in the Low-Country districts over the last ten-year period

District	Ratnapura	Kegalle	Galle	Matara	Kalutara
Percentage drop in Tea extent	24.3	19.0	39.0	6.0	21.9

The overall reduction of extent in the Low-Country in RPC estates is estimated as 21.7%. This reduction is possibly due to diversification of tea fields in to other crops particularly in Galle district, where the percentage drop is 39.0 and abandoning of low yielding tea fields to curtail the burden of maintaining such fields which leads to high cost of production. Sometimes, this may

create a vicious cycle *i.e.* when the productivity is dropped, some tea extent would be taken out from the revenue in order to maintain the productivity and this in turn will result in a drop of total tea production. As a result, certain tea estates become “silence” and some have been amalgamated to the adjoining estates.

3. Replanting rate

There has been no substantial addition to the tea extent in lieu of reduction of tea extent in the period under review, as because of

insufficient attempt of replanting. Table 04 shows the average annual replanted extent in the corporate sector in last ten-year period

Table 4. Average extent replanted in RPC sector in Low-Country districts during the period of 2007 - 2016

District	Ratnapura	Kegalle	Galle	Matara	Kalutara
Average annual replanted volume (ha/year)	43.8	7.73	10.6	10.7	15.81
Replanted volume as percentage of total extent (percentage/year)	0.63	0.8	1.4	0.64	2.6

Although highest replanting volume was reported in Ratnapura district, it is the district that has the lowest replanting rate *i.e* 0.6% in the RPC sector, per annum during the period under review. This study also revealed that the replanting rate is below 1% in the RPC estates in Matara and Kegalle districts which are reported as 0.6. and 0.8% per year, respectively. Replanting rates of these districts even the Galle district, where the replanting rate is 1.4 %, can't be considered as satisfactory level. In view of the gravity of the present scenario, Samansiri *et al.* (2010) suggested that minimum of 3% replanting rate per annum is required for RPC sector for them to perform better. In the long run, low replanting rate would not only lead to further drop of yield but also contribute to decline of the effective extent under tea.

CONCLUSIONS

The following key conclusions can be drawn from this study.

- There is a declining trend in total tea production and average yield in the RPC sector in almost all the Low-Country tea growing districts.
- The total tea production in RPC sector has been dropped by 36%, 24%, 45%, 31% and 11% over the last ten-year period in Ratnapura, Kegalle, Galle,

Matara and Kalutara districts, respectively. The average tea productivity (kg/ha/year) has also been decreased by 13%, 7% and 27% in the same period in Ratnapura, Galle and Matara districts and 18.7 % in Kegalle district over the last 6-year period.

- A significant reduction in tea extent (21.7%) was recorded in the low-country RPC sector as a whole and the district contribution to the reduction was 39%, 24.3%, 21.9%, 19% and 6% in Galle, Ratnapura, Kalutara, Kegalle and Matara district, respectively in the period under review.
- A very low rate of replanting (under 1%) was encountered in Ratnapura, Matara and Kegalle district.
- Considering the above facts, it is obvious that the estates in the Low-Country RPC are in a critical state, where an urgent transformation is implored.

MANAGEMENT IMPLICATIONS

RPC estates play an important role in the Sri Lankan tea industry not only by providing the tangible outcome to the economy, but also a

vast array of intangible benefits starting from the maintenance of a large land extent and human population spread over 10 districts in the manner which avoid additional burden to the country while setting and maintaining the standards and norms. This simply means that any downfall of this sector can adversely affect not only to the entire tea industry but also to the whole country. In that sense, there is a greater responsibility lies with the sector, particularly decision makers to protect the sector without letting to demise. Further, well organized structural arrangement, skilled and knowledgeable human resources base, properly developed infrastructure and well-disciplined working culture are the key strength of the corporate sector, and that would give a competitive advantage to RPC sector over the other sectors to outperform and generate enormous benefits to the country.

However, for some reasons including huge capital cost amounting around Rs. 2.5 million (Jayakody and Shyamalie *et al.* 2002) the responsible management companies are hardly investing money for replanting programmes. Samansiri *et al.* (2011) pointed out that 35% of the Low-Country tea extent is more than 30 years old and of which 15% is more than 40 years old. Furthermore, the present study showed that more than 20% of the tea extent is being abandoned. This situation emphasizes a need of massive replanting programme in RPC sector to regain the original status. Based on the above statistics and findings, it can be estimated that replanting is required at a rate of annually 5% for 7-year period commencing from the current year. However, judging by past experience, it is doubtful whether the management companies would be able to perform this task satisfactorily.

Yet, a similar type of drawback had been observed in the small holding sector and a project was initiated by the line ministry with the support of International Fund for Agricultural Development (IFAD) to assist smallholding sector in order to improve the productivity of smallholding sector by motivating them to replace their older tea with new tea cultivation (Anon, 2016). Plantation sector too needs a similar kind of intervention in order to remain it viable and exist. Therefore, attention of relevant policy makers is drawn to the outcome of this study in order to formulate a financial support to uplift this vital segment of the tea industry. This financial support can be a long term loan scheme with an interest on a concessional rate.

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