



# Managers' Perception on Crop Productivity and Training Needs of State-Managed and Regional Plantation Company Tea Estates in Mid-Country, Sri Lanka

Kahandawa K R W B<sup>1</sup>, Gunapala K G M J W<sup>1\*</sup> and Ekanayake H E M U C S<sup>1</sup>

Advisory and Extension Division, Mid-country Regional Centre, Tea Research Institute of Sri Lanka, Hantane, Kandy, Sri Lanka  
janakiwathsala29@gmail.com

**Abstract.** The tea estate sector in Sri Lanka plays a vital role in sustaining national tea production, while training and awareness programmes are essential for enhancing both the quality and quantity of tea production and for improving the livelihoods of employees. This study examines the perception of estate managers on crop productivity and training needs of state-managed and Regional Plantation Company estates in the Mid-country. A descriptive cross-sectional survey was conducted among 30 estates, representing both categories, using a structured questionnaire. Data were analyzed through descriptive statistics and the Mann-Whitney U test. Results indicated that the majority of estate managers in both categories were educated up to or above the diploma level and had more than 15 years of experience in tea plantation management. Inadequate training and awareness of staff and workers (75%) was perceived as a major contributor to lower productivity. Significant differences were observed between state-managed and Regional Plantation Company estates in terms of investment in crop development and social development of human capital. Findings further revealed that most estates in Mid-country conduct training programmes every three or six months. Estate managers emphasized the need for training in cultivation practices and productivity improvement as the priority area. The study highlights the importance of organizing tailor-made programmes integrated with need assessments and pre- and post-assessments. Further, the study concludes the necessity to initiate training and awareness projects as collective programmes of the Human Resource departments of estates and training and awareness agents in the tea sector.

**Keywords:** Training and awareness, Crop productivity, State-managed estates, Regional Plantation Company, Estate managers

# 1 Introduction

## 1.1 Tea Industry of Sri Lanka

The tea (*Camellia sinensis* (L.) Kuntze) industry has grown to be the top agricultural export in Sri Lanka. It plays a vital role in the economy while providing direct and indirect employment to nearly one million people. The land area covered by tea plantations in Sri Lanka amounts to nearly 267,187 hectares (Ministry of Agriculture and Plantation Industries, 2023). The country's total tea production is usually more than 300 million kilograms annually (EDB, 2023a). The tea-growing areas in Sri Lanka could be broadly categorized as the low country (<600m), mid-country (600m-1200m), and upcountry (>1200m) based on the elevation (Ziyad and Zoysa, 2008). Upcountry teas are mainly grown in the Badulla and Nuwara Eliya districts. The Kandy and Matale districts fall into the mid-country region. Low-grown teas can be found in the Galle, Matara, Ratnapura, Kegalle, and Kalutara districts (Sandika, 2018).

The tea industry mainly consists of two main sectors, including the estate sector and the tea smallholding sector. Tea estates with over 10 acres are considered estate sector tea estates. The tea smallholding sector in Sri Lanka is defined as tea land extents with less than 10 acres (Wekumbara *et al.*, 2017). The tea estate sector includes Regional Plantation Company (RPC) estates, Janatha Estates Development Board (JEDB) estates, Sri Lanka State Plantations Corporation (SLSPC), and estates of Elkaduwa Plantations. Until 1992, state-owned plantations were managed under JEDB and SLSPC. However, with the heavy losses of state-owned plantations, it was reversed with the formation of RPC. Most of the estates were brought under 20 clusters, and their management was vested with the private sector in 1992. This move resulted in huge savings, and most RPC estates started making profits. The non-viable estates in the Mid-country, which could not be profitably included in the 20 cluster companies, continued as JEDB and SLSPC. Elkaduwa Plantation Ltd., a few estates that were taken over for private management and reverted to the state a few years later (Mohamed and Zoysa, 2008).

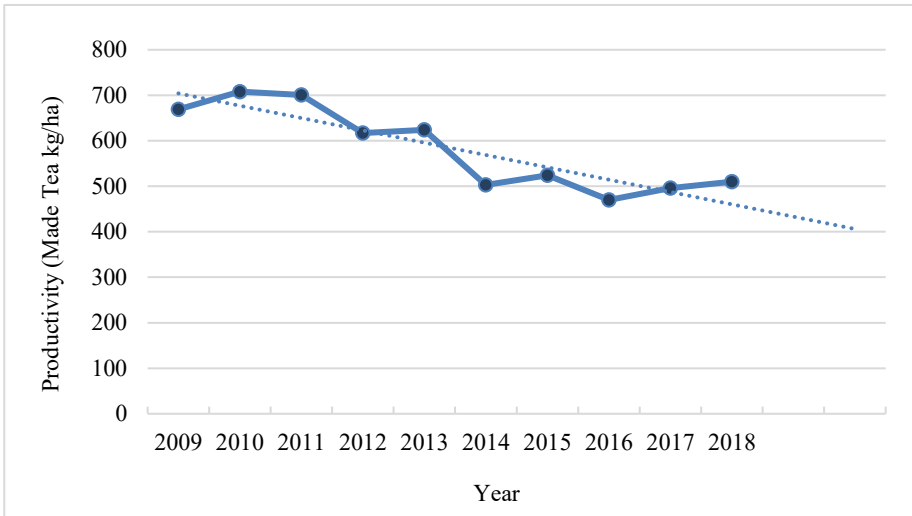
## 1.2 Crop Productivity in State-Managed and RPC Estates in Mid-country

The average tea yield in Sri Lanka is around 1,400 kg per hectare, considerably lower than in countries like Kenya and India. Additionally, Ceylon tea has one of the highest production costs globally. Since 2014, local tea production has remained largely stagnant, which has limited the country's export capacity (EDB, 2023b). In 2024, Sri Lanka exported approximately 245.78 million kilograms of tea, generating around USD 1.43 billion in revenue (TEA, 2025).

The tea plantation in Sri Lanka was started in the Mid-country. The first commercial planting of tea in Sri Lanka was undertaken only in 1867, on 19 acres of land in Loolecondera Estate, Hewaheta (Nathaniel, 2008). Estate sector tea plantations in the Mid-country tea-growing region (mainly Kandy and Matale districts) comprise 12,791 hectares with 60 tea estates. The management of these estates can be categorized into state-managed and RPC. It consists of 23 RPC estates and 37 state-managed estates, including 16 JEDB estates, 15 SLSPC estates, and 6 estates of Elkaduwa Plantations.

Crop productivity can vary depending on various factors, including climate, elevation, soil quality, and agricultural practices, etc. In Sri Lanka, climate change is projected to negatively affect tea productivity overall, as rising minimum temperatures and rainfall variability outweigh the potential benefits of elevated CO<sub>2</sub>. Findings of the study showed that tea cultivations at low and mid elevations are more vulnerable to the adverse impacts of climate change than those at high elevations. (Wijeratne *et al.*, 2007) Effective agricultural practices, including proper plucking, pruning, fertilization, shade management, irrigation, pest control, and replanting, can significantly increase tea productivity and resilience. In contrast, poor practices contribute to yield decline and soil degradation (Edirisinghe *et al.*, 2024).

It is observed that in the last two decades, those state-managed estates were performing with low replanting rates and low average yields. One of the large state-managed tea plantation companies in Mid-country is SLSPC. Fig. 1 shows the productivity decline trend of SLSPC estates from 2009 to 2018 (Anon, 2019). Also, the productivity of RPC-managed estates was reported as 1125 kg/ha from the survey, which qualifies the secondary data on the yield in the RPC sector reported over the last 10 years. Further, it is reported that Mid-country has the lowest productivity gained region among all tea-growing areas in Sri Lanka.



**Fig. 1.** Productivity of SLSPC estates in Mid-country from 2009 to 2018 (Source: (Anon, 2019).

### 1.3 Training and Awareness

Training programmes are a series of educational activities planned to achieve particular, defined objectives. In agriculture, the training programmes may be formal or informal educational activities, long-term or short-term programmes, and they can be prepared for an individual or a group of farmers such as, farmers' workshops and seminars,

individual farmer home or field visits, etc. (Gwivaha, 2015). Training and awareness programmes in the tea sector in Sri Lanka play a crucial role in improving the quality of tea production and the livelihoods of tea workers. These programmes typically cover various aspects including, tea cultivation techniques, pest and disease management, plucking and processing, quality control, environmental sustainability, welfare of estate workers, market trends and marketing, and technology adoption. They aim to enhance the sustainability and competitiveness of the Sri Lankan tea industry while ensuring the well-being of those involved in the sector.

The most practiced method of training in the tea plantation sector is on-the-job training. This is common for all the jobs in this sector, from the executives to the lowest level worker. Except for a few opportunities in formal training for diplomas and degrees for executive and certificate courses for field staff, almost all the employees in this sector qualify and perform in their jobs through on-the-job training. Wickramasinghe (2008) explained that in on-the-job training, trainees learn in the actual environment and with the equipment on the job. It is a relatively cheap method and less time-consuming. This method increases the effectiveness of training, and the trainee gets more familiarized with the co-workers, working conditions, and supervisors. Unless some on-and-off training is organized by the National Institute of Plantation Management (NIPM), and the Tea Research Institute of Sri Lanka (TRISL), there is no such opportunity for systematic training for the tea estate sector employees. Sivaram (2000) viewed that a series of health education programmes are being undertaken for the estate community through formal staff training as well as community-based health volunteer initiatives like Non-Government Organizations (NGOs).

Employee training and awareness, as a knowledge management practice should be an important integral component of human resource management (HRM) in an organization and focus the productivity. Gamage and Wickramaratne (2018) suggested that the total HRM practices that should be applied in the tea industry should go beyond the conventional HR practices and focus more on the best human care practices and knowledge management practices, which contribute to enhancing the levels of more critical productivity indicators.

#### **1.4 Rationale of the Study**

Training is an effective resource for attaining knowledge, skills, and abilities, adding to human efficiency and effectiveness. In the tea sector, it is a critical input for the quick transfer of technology to improve agricultural practices and socio-economic conditions. Increasing the knowledge and skills of the employees to adopt new techniques, equipment, etc., can be possible with training. Although it is widely discussed as a requirement, research on training in the tea sector employees locally and internationally is limited. Nevertheless, it has become very vital today in the Sri Lankan tea estate sector, as the majority of remaining employees in estates are not trained to the expected level in many of the jobs they perform.

Today, most of the lands in tea estates in the Mid-country are degraded due to the utilization of the same soil for prolonged tea plantations for over 150 years. According

to the observations and field investigations, both the state and RPC estates are conducting training programmes mostly without adequate training needs assessment, proper identification of knowledge gaps, and awareness-building plans. Further, after conducting training programmes, it is observed that there is no follow-up on adoption of the knowledge and skills acquired through training. Ensuring effective training means knowing whether an investment of time, energy, and resources is being spent effectively or not (Reddy and Kumar, 2020). Therefore, research on training in the tea sector in Sri Lanka is crucial to monitor effective resource utilization, improve quality and productivity, and ensure the sustainability of the tea sector by improving worker well-being while maintaining competitiveness in the global tea market.

## 1.5 Objectives of the Study

### General Objective

To examine the perception of estate managers on crop productivity and training needs of state-managed and RPC estates in the Mid-country, Sri Lanka.

### Specific Objectives

1. To assess the perception of estate managers on factors contributing to lower productivity in state-managed and RPC estates in the Mid-country, Sri Lanka
2. To identify the current status of training and awareness programmes for staff and workers in state-managed and RPC estates in the Mid-country, Sri Lanka
3. To assess the perception of estate managers on training and awareness needs of staff and workers in state-managed and RPC estates in the Mid-country, Sri Lanka

## 1.6 Hypotheses of the Study

H<sub>1</sub>: There is a significant difference between state-managed and RPC estates in terms of factors affecting crop productivity.

H<sub>2</sub>: There is a significant difference between state-managed and RPC estates in terms of the training and awareness needs of staff and workers.

## 2 Methodology

A descriptive, cross-sectional survey was conducted among large tea estates in the Mid-country tea-growing region of Sri Lanka. The sampling frame comprised 60 estates (study population), including both state-managed and RPC estates. To ensure representation by ownership type, the population was stratified into state-managed estates and RPC estates. Within each stratum, estates were selected using simple random sampling to obtain a more representative sample from the list of estates. Proportional allocation to stratum size was applied where possible, ensuring comparability between state-managed and RPC estates. A total of 30 estates (50% of the population) were sampled as the unit of analysis based on the given time and resource constraints.

For each selected estate, the survey targeted estate managers. A pre-tested, structured questionnaire in English, refined via expert review and a small pilot, was used as the data collection instrument. The questionnaire was designed to collect background information of estate managers, including their education level, years of experience in the tea industry. Estate productivity was assessed using the average annual yield in 2022. Perception of factors contributing to lower productivity was measured using a multi-item Likert scale (1–4) across key domains such as decision-making, investments, and adoption of modern technologies, training and awareness. In addition, training and awareness needs as well as the current status of training programmes were assessed through priority ranking of topics, and frequency which such programmes were organized. An online survey administered to managers of sampled estates was conducted as the primary data collection method. Secondary data were extracted from journal articles, institutional publications, credible web pages, and unpublished TRISL records.

Data were tabulated in Microsoft Excel and subsequently analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics such as frequencies and percentages were used to summarize the background information of estate managers and to assess the necessity of training programmes. The Mann–Whitney U test was applied to compare state-managed and RPC tea estates to key factors most strongly associated with lower productivity in the Mid-country.

### 3 Results and Discussion

#### 3.1 Background Information of Managers in Mid-country Tea Estates

The educational level of estate managers in the Mid-country region is given in Table 1. Accordingly, the majority of managers in both state-managed and RPC estates had higher educational qualifications up to or above the diploma level related to their profession of practice. This indicates that managers in Mid-country tea estates are well-educated with relatively higher academic qualifications. Also, educated people are expected to have favorable attitudes towards agricultural skills, knowledge, and information (Habib *et al.*, 2007).

**Table 1.** Educational level of managers in Mid-country tea estates

Educational Level	Percentage of Respondents (%)	
	State-managed	RPC
Advanced Level	19	29
Diploma	44	29
Degree	13	14
Post Graduate	25	29

Further, a relatively higher proportion of managers in state-managed estates (44%) possess a diploma. In contrast, an equal percentage (29%) of RPC managers hold either an advanced level qualification, a diploma, or a postgraduate qualification. However,

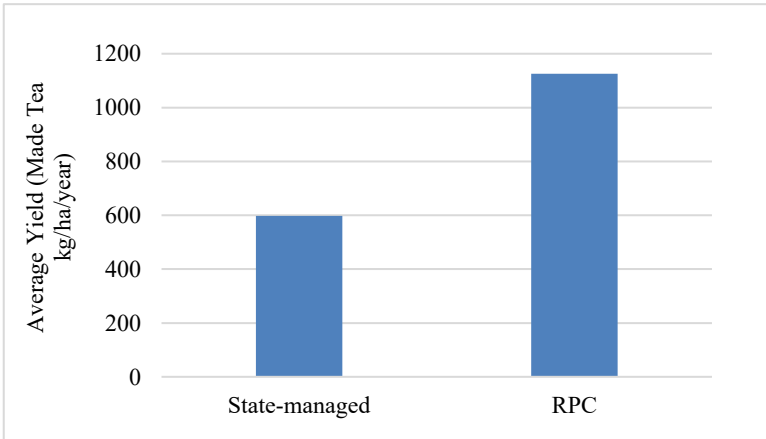
managers of RPC estates show a slightly higher representation at the postgraduate level, indicating variations in educational attainment across estate categories.

Table 2 illustrates the working experience of estate managers under tea cultivation. According to the findings, the majority of the respondents in both estate categories have more than 15 years of experience in tea plantation management. Comparatively, longer work experience of more than 20 years is more prevalent among RPC managers than in the managers of state-managed estates. The farming experience caused more excellent harvests and raised productivity by implementing advanced technologies in cultivation (Obinne, 1990). Therefore, the considerably higher farming experience of managers in Mid-country tea estates is important to improve the productivity of their estates.

**Table 2.** Work experience of managers in Mid-country tea estates

Work Experience (Years)	Percentage of Respondents (%)	
	State-managed	RPC
5 - 10	0	14
11 - 15	6	7
16 - 20	44	21
21 - 25	31	36
> 25	19	21

### 3.2 Crop Productivity in Mid-country Tea Estates



**Fig. 2.** Average annual yield of Mid-country estates in 2022

The average yield of estates in 2022 under the government and RPC management was found with a clear difference as 598 kg made tea/ ha and 1125 kg made tea/ ha, respectively (Fig. 2). Both yield values were below the national average production of Sri Lanka in 2022, which was 1159 kg made tea/ha (CBSL, 2023). Poor socio-economic

conditions of workers, traditional work norms, and lack of cooperativeness between workers and management have adversely affected the labour productivity, ultimately reducing the overall productivity of the estates (Dishanka and Ikemoto, 2014). As reported by Balasooriya, *et al.* (2013), perceptions on the role of well-maintained factories and fields and training on productivity were seen to be higher in more productive estates. Factors such as working conditions, welfare facilities, and being a beneficiary of development initiatives got more mixed results, as the coverage of these conditions amongst the estates is also varied.

### 3.3 Perception of Managers on Factors Contributing to Lower Productivity in Mid-country Tea Estates

Respondents' perceptions of the impact of the given factors on lower productivity were analyzed, and the responses of both categories were compared. Inadequate training and awareness of workers and staff on cultural practices were identified by more than 75% as having a high or moderate impact on state-managed and RPC estates (Table 3). Also, a similar factor, i.e., less adoption of modern technology and mechanization, is perceived by both categories of estates as having a high or moderate impact on productivity by more than 85% of the respondents.

Among the other factors, insufficient investment in crop development is an indirectly related factor to training and awareness, but directly related to productivity. Based on the investigations conducted by the extension staff of TRISL over a prolonged period, it is qualified that sufficient investments in crop development like replanting are long overdue in state-managed estates compared with RPC estates. About 43% of the RPC estates identified that less investments in the social development of the human capital have a low or no impact on productivity, while none of the state-managed estates identified it as a low or no impact factor on productivity. However, Sharpe (2004) emphasized that education, health, and social disparities are key social determinants of productivity. Similarly, Koch and McGrath (1996) highlighted that investment in employee welfare is crucial, as it enhances satisfaction and leads to a more productive workforce. Therefore, there is a requirement for the social development of the employee community in both state and RPC estates. The perception of managers on the impact of other factors on productivity was identified as fairly the same in state-managed and RPC estates.

**Table 3.** Perception of managers on factors contributing to lower productivity in Mid-country tea estates

Factors	Impact Level (%)	
	State	RPC

	H	M	L	N	H	M	L	N
Low productivity of the managers, staff and workers	31	50	19	0	36	57	0	7
Lapses in decision making of the management in the past	63	31	6	0	43	36	21	0
Unnecessary political and trade union activities	69	19	6	6	50	50	0	0
Insufficient investment in crop development	25	75	0	0	29	36	36	0
Less investments in social development of human capital	25	75	0	0	14	43	43	0
Inadequate training and awareness of workers, staff and managers on cultural practices	50	25	25	0	50	36	14	0
Less adoption of modern technology and mechanization	56	31	13	0	29	57	14	0
Less attention in product sales, income and marketing	38	38	19	6	50	21	29	0
Insufficient infrastructure facilities in the estates	38	50	13	0	29	43	29	0
Information gap on agricultural and technical recommendations	38	50	13	0	36	43	21	0

H = High, M = Moderate, L = Low, N = No

According to the results of the Mann–Whitney U test, there is enough evidence to show that there are significant differences in the insufficient investment in crop development and less investments in social development of human capital by state-managed and RPC estates (Table 4). However, this evidence is insufficient to identify the significant difference between other factors in the two categories of estates in Mid-country.

**Table 4.** Comparison of managers’ perceptions on factors contributing to lower productivity between state-managed and RPC estates in Mid-country

Factor	Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	P Value
	State	16	14.78	236.50	100.500	0.596

Low productivity of the managers, staff and workers	RPC	14	16.32	228.50		
Lapses in decision making of the management in the past	State	16	17.19	275.00	85.000	0.212
	RPC	14	13.57	190.00		
Unnecessary political and trade union activities	State	16	16.81	269.00	91.000	0.303
	RPC	14	14.00	196.00		
Insufficient investment in crop development	State	16	18.31	293.00	67.000	0.042*
	RPC	14	12.29	172.00		
Less investments in social development of human capital	State	16	18.50	296.00	64.000	0.023*
	RPC	14	12.07	169.00		
Inadequate training and awareness of workers and staff on cultural practices	State	16	15.12	242.00	106.000	0.786
	RPC	14	15.93	223.00		
Less adoption of modern technology and mechanization	State	16	17.25	276.00	84.000	0.203
	RPC	14	13.50	189.00		
Less attention in product sales, income and marketing	State	16	14.88	238.00	102.000	0.658
	RPC	14	16.21	227.00		
Insufficient infrastructure facilities in the estates	State	16	16.75	268.00	92.000	0.368
	RPC	14	14.07	197.00		
Information gap on agricultural and technical recommendations	State	16	16.00	256.00	104.000	0.718
	RPC	14	14.93	209.00		

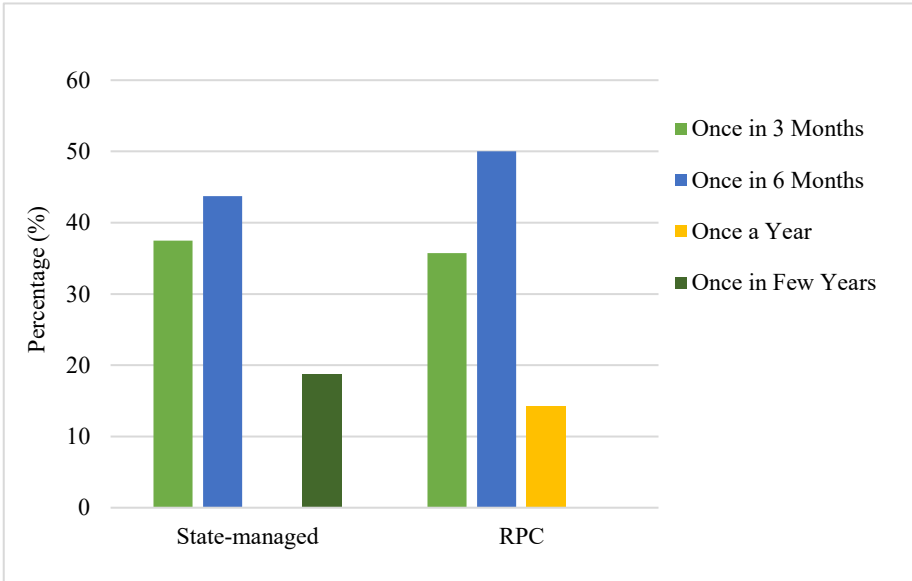
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\*Significant at the 0.05 level

### 3.4 Current Status of Training and Awareness Programmes for Plantation Staff and Workers

Training and awareness programmes for plantation staff and workers play a crucial role in improving productivity in tea plantations. The frequencies at which training and awareness programmes related to the work life and social life of estate workers in Mid-

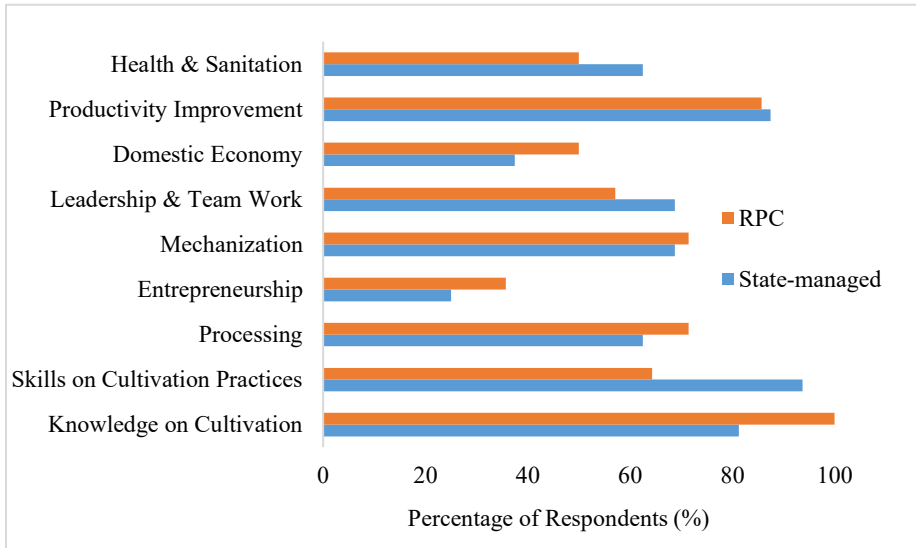
country tea estates are shown in Fig. 3. The result indicated that around 35% and 45% of both state-managed and RPC estate staff and workers are trained every three months and six months respectively. Further, 14% of RPC estates organize training programmes for their staff and workers once a year, while 19% of state-managed estates organize training programmes once every few years for their staff and workers. This clearly demonstrates that more than 80% of both categories of estates organize training programmes every three or six months to improve their knowledge and skills on cultivation practices as well as social life.



**Fig. 3.** Frequency of organizing training and awareness programmes for staff and workers in Mid-country tea estates

### 3.5 Perception of Managers on Training and Awareness Needs of Plantation Staff and Workers

The initial step of training is the identification of training needs. Almost all the respondents identify the training needs of their employees in some way. Systematic sharing of knowledge, skills, and attitudes is vital for improving the productivity of tea estates. To achieve these objectives, training and awareness programmes should be designed.



**Fig. 4.** Perception of managers on training and awareness needs of plantation staff and workers

Identification of training and awareness needs could be addressed through various methods and means. According to the perception of managers of respective estates, it is shown that more than 80% of both state and RPC managers have identified knowledge of cultivation practices and productivity improvement as major subject areas of training in Mid-country estates (Fig. 4). Further, more than 60% of respondents have identified skills in cultivation practices, post-harvest handling, factory processing, and mechanization as training needs in both state-managed and RPC estates. Equally, Atapattu and Jayasinghe-Mudalige (2019) identified that worker skill development in cultivation practices has a significant impact on labour productivity. However, subjects related to leadership and teamwork, health and sanitation, entrepreneurship, and management of the domestic economy were perceived comparatively in lower percentages by the respondents. At the same time, it highlighted that the most important identified subject area of training and awareness for RPC estates is knowledge of cultivation practices (100%), and skills in cultivation practices (94%) for state-managed estates.

## 4 Conclusion

As per the demographic features of the sample, the educational level of managers in both state-managed and RPC estates in the Mid-country is high. The majority have more than 15 years of experience in tea plantation management. Mid-country tea estates, which belong to two different categories of management, have differences in crop productivity. The majority of managers in both categories of estates perceived inade-

quate training and awareness of staff and workers, on cultural practices as a main impact on productivity. It seems that there are significant differences in the insufficient investment in crop development and less investments in social development of human capital by state-managed and RPC estates.

The results revealed that both state-managed and RPC estates in Mid-country organize training programmes every three or six months to improve knowledge and skills on cultivation practices as well as the social well-being of their staff and workers. However, this frequency of conducting training programmes is not sufficient in either sector. Therefore, it is suggested to conduct regular training programmes, including some collective annual training and awareness plans with the Human Resource (HR) departments of every estate, as organizations that manage large numbers of employees. The total HR practices that focus more on the best human care practices and knowledge management practices will contribute to enhancing the levels of productivity in tea estates. Moreover, it was expressed that the majority of both state-managed and RPC managers have identified knowledge of cultivation practices and productivity improvement as major subject areas of training in Mid-country estates according to their perception. They have a high demand for knowledge and skill training on cultivation practices and productivity improvement. Therefore, technology transfer and extension agents must draw up suitable programmes taking the suggestions of managers into account as received in the study.

It is recommended to organize and conduct tailor-made programmes according to the requirements of employees, considering their work environment unique to each occupation. Training and awareness should be a continuing process. It always should proceed with deliberate attention to training need assessment, prioritizing required subjects, mode of programme delivery, pre, post-training assessments, and monitoring the adoption after the programme. The training and awareness programmes should be an integral part of HRM policy in any of the organization coinciding with the productivity targets of each and every employment level. Therefore, it is suggested to initiate collective programmes with HR departments of the estate sector organizations and training and awareness agents like TRISL, NIPM or any other relevant organizations to plan training and awareness programmes for employees in the estate. Further, HR departments of these organizations who manage cooperate sector estates should pay due attention and equipped with necessary capacities to tackle the appropriate sources for training and awareness needs of their large employee base.

## References

1. Anon: Statement of Corporate Intent, between Ministry of Finance, Ministry of Public Enterprise, Kandyan Heritage and Kandy development and Sri Lanka State plantation Corporation, Ministry of Finance. <https://www.treasury.gov.lk/api/file/df23f2cf-541e-4d10-9cf8-1dc65bab481c>, last accessed 2023/09/30 (2019)
2. Atapattu, A M.I.H., Jayasinghe-Mudalige, U.K.: Assessing the Factors Affecting Labour Productivity of Tea Harvesters in Up Country Tea Plantations in Sri Lanka: A Case Study in Nuwara- Eliya District. *Applied Economics & Business* 3(2), 22-34 (2019)

3. Balasooriya, A., Fernando, K., Mayadunne, G.: Investing in People: Social Welfare and Labour Productivity in Sri Lanka's Plantation Sector, Plantation Communities Project – Phase II, World University Service of Canada. <https://www.cepa.lk/wp-content/uploads/2003/10/2013-CEPA-WUSC-Investing-in-People.pdf>, last accessed 2023/10/09 (2013)
4. Central Bank of Sri Lanka (CBSL): Annual Report 2022. <https://www.cbsl.gov.lk/en/publications/economic-and-financial-reports/annual-reports/annual-report-2022>, last accessed 2023/03/11 (2023)
5. Dishanka, S., Ikemoto, Y.: Social Development and Labour Productivity: The Problem and a Solution for the Tea Plantation Sector of Sri Lanka. *Colombo Business Journal* 5(1), 67-80 (2014).
6. Edirisinghe, J.C., Ranjan, H., Herath, H.M.L.K., Jayasinghe-Mudalige, U.K., Wijeratne, M., Kuruppu, V., Jayathilake, C., Wijesuriya, W., Somarathna, K., Karunaratne, S., Jayawardana, S., Gunathilaka, D., Balasooriya, D.: Impact of climate on tea yield: an empirical investigation from Sri Lanka. *Journal of National Science Foundation of Sri Lanka* 52(2), 183-190 (2024)
7. Export Development Board (EDB): Ceylon Tea Industry Capability. <https://www.srilankabusiness.com/tea/about-tea/industry-capability.html>, last accessed 2023/09/11 (2023a)
8. Export Development Board (EDB): The Export Potential of Ceylon tea. <https://www.srilankabusiness.com/tea/exporter-information/export-potential.html>, last accessed 2024/08/03 (2023b)
9. Gamage, A.T., Wickramaratne, W.P.R.: Towards a Sustainable HRM Model for Human Productivity in Tea Industry: An Empirical Study of Tea Plantation Sector in Sri Lanka. Conference: 13<sup>th</sup> International Conference on Management and Finance, University of Colombo, Sri Lanka. 2018(1), 127-144 (2018)
10. Gwivaha, F.A.: Factors that impact agricultural extension training programs for smallholder women farmers in Njombe District, Tanzania. <https://dr.lib.iastate.edu/server/api/core/bitstreams/f86250ca-bc2f-4cfc-930a-7f30e7bdb16c/content>, last accessed 2023/09/29 (2015)
11. Habib, M.U., Khan, M.Z., Iqbal, M.A., Nawab, K.H., Ali, S.H.: Role of farmer field schools on sugarcane productivity in Malakand, Pakistan. *African Crop Sci. Conf. Proceedings* 8, 1443-1446 (2007)
12. Koch, M.J., McGrath, R.: Improving labour productivity: Human resource management policies do matter. *Strategic Management Journal* 17(5), 335-354 (1996)
13. Ministry of Finance: Statement of Corporate Intent, Sri Lanka State Plantation Corporation. <https://www.treasury.gov.lk/web/department-of-public-enterprises-links-list-asci-section/state-plantation-corp>, last accessed 2024/08/05 (2019)
14. Ministry of Agriculture and Plantation Industries: Tea Sector, Statistical Information on Plantation Crops 2022. Plantation Industries Division, Ministry of Agriculture and Plantation Industries, Battaramulla, Sri Lanka (2023)
15. Mohamed, M.T.Z., Zoysa, A.K.N.: An Overview of Tea Industry in Sri Lanka, Handbook on Tea. 1<sup>st</sup> edn, pp. 4-5. Tea Research Institute of Sri Lanka (2008)
16. Nathaniel, R.K.: Introduction, Handbook on Tea. 1<sup>st</sup> edn, pp. 1-2. Tea Research Institute of Sri Lanka (2008)
17. Obinne, C.P.: Towards a Unified Model of Effective Communication for increasing adoption of farm technologies. *J. Rural Dev. Admin.* 22, 11–18 (1990)
18. Reddy, S.Y., Kumar, T.V.: Training: An Effective Approach for Farmer's Development. *Agriculture and Forestry: Current Trends, Perspectives, Issues – II*. Immortal publications. [https://www.researchgate.net/publication/352246166\\_Training\\_An\\_Effective\\_Approach\\_for\\_Farmer's\\_Development](https://www.researchgate.net/publication/352246166_Training_An_Effective_Approach_for_Farmer's_Development), last accessed 2023/09/30 (2020)

19. Sandika, A.L.: Tea cultivation in Sri Lanka as a legacy of the British colonization: Impacts and trends. *Journal of Social Sciences and Humanities Review* 3(1), 65-70 (2018)
20. Sharpe, A.: Exploring the linkages between productivity and social development in market economies. <http://www.csls.ca/reports/ProdSocDevMktEcon.pdf>, last accessed 2025/08/08 (2004)
21. Sivaram, B.: *Planation Management in the New Millennium*. National Institute of Plantation Management, Sri Lanka (2000)
22. Tea Exporters Association (TEA): Statistics. <https://teasrilanka.org/statistics>, last accessed 2025/08/08 (2025)
23. Wekumbara, W.G., Mohotti, A.J., Frossard, E., Kudagammana, S.T., Silva, K.D.: Prospects and issues related to tea cultivation in mid country home garden based tea smallholdings in a selected village in Sri Lanka. *Tropical Agricultural Research* 28(4), 503-516 (2017)
24. Wickramasinghe, N.C.: A Study of Tea Plantation Operational Aspects in Relation to Operational Workforce. [https://www.historyofceylontea.com/pdf load/Articles/a\\_study\\_of\\_tea\\_plantation\\_operationalaspects\\_in\\_relation\\_to\\_operational\\_workforce.pdf](https://www.historyofceylontea.com/pdf/load/Articles/a_study_of_tea_plantation_operationalaspects_in_relation_to_operational_workforce.pdf), last accessed 2023/09/29 (2008)
25. Wijeratne, M.A., Anandacoomaraswamy, A., Amarathunga, M.K.S.L.D., Ratnasiri, J., Basnayake, B.R.S.B., Kalra, N.: Assessment of impact of climate change on productivity of tea (*Camellia sinensis* L.) plantations in Sri Lanka. *Journal of National Science Foundation of Sri Lanka* 35(2), 119-126 (2007)
26. Ziyad, M.T., Zoysa, A.K.N.: *An Overview of Tea Industry in Sri Lanka: Handbook on Tea*. 1<sup>st</sup> edn, p. 5. Tea Research Institute of Sri Lanka (2008)

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