

Explore the Existing Climate Change Resilience Strategies for Low-Country Tea Cultivation

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Abstract

The tea sector is one of the most important agricultural industries in Sri Lanka, providing employment opportunities for over one million people while alleviating poverty in rural regions. However, climate change is affecting the yields and quality of tea production and poses challenges to production techniques. This study focuses on climate resilience strategies recommended by the Tea Research Institute (TRI) for the low-country tea production areas of Sri Lanka. TRI had introduced seven main strategies to fit into the common practices of the region. The three main strategies were selected for this study: drought mitigation in tea plantations, burying of prunings to improve soil fertility and productivity of tea lands, and shade management in tea. These strategies were assessed in this study by conducting a SWOT matrix using both primary and secondary data. Primary data were collected from TRI and secondary data, from scientific articles, government reports, and institutional reports. All the strategies addressed current weather events, and they played a major role in enhancing tea land productivity. From all the strategies, shade management was an important approach given the effects of reducing high temperatures in the microclimate. However, the management needs to consider competition between the tea and the shade species. Unpredictable weather events severely damage tea crops and current strategies failed to address these challenges effectively. According to the SWOT matrix, strategies need to be updated with modern techniques such as IoT and Drona, eco-friendly mulching, and new irrigation methods to mitigate the increasing severity of weather events. Therefore, regular assessments and monitoring of the climate resilience approaches are critical for sustainable tea production. The study suggests further research to assess the effectiveness of the proposed strategies and the implementation of a localized strategy evaluation mechanism.

Keywords: *Drought mitigation, Burying of prunings, Shade management*