



# Dayani Gunathilaka

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## Summary

My research interests lie at the intersection of agricultural, environmental & development economics. A unifying theme of my work is an effort to understand how economic systems work and how they can be used as mechanisms of understanding and analyzing issues like climate dynamics towards a sustainable development. I am specifically interested in learning how environmental changes are interconnected with agriculture and development. My PhD thesis aims quantifying economic impact of climate change on perennial crop production, profits, labour demand using the case of tea production in Sri Lanka. Perennial crops are likely to be less adaptable to climate change compared to annual crops. The plantation crop sector, particularly tea, is a key contributor to the Sri Lankan economy in terms of foreign exchange earnings, employment and food supply. However, changes in temperature, rainfall and the occurrence of extreme weather events have adversely affected the sector. Many studies in the literature have focused on climate change impacts on major annual crops; however, to date, comprehensive assessments of the economic impacts of weather variations on perennial crops are rare. In this work, I use farm-level historical data set over a 15-year period to analyse weather effects on production, profits and labour demand from the tea plantation sector. In addition, the thesis will identify the major methods used by farmers to adapt to climate change in perennial cropping systems, the factors that determine their choice of adaptation method, and the barriers for adaptation. Furthermore, potential joint-production methods (crops and carbon farming) for enhancing income from farms whilst also supplying ecosystem services will be modelled.

## Research Expertise

- Gunathilaka, R. P. D., Smart, J. C. R., & Fleming, C. M. (2017). The impact of changing climate on perennial crops: the case of tea production in Sri Lanka. *Climatic Change*, 140(3), 577-592.
- Gunathilaka, R. P. D., & Tularam, G. A. (2016). The tea industry and a review of its price modelling in major tea producing countries. *Journal of Management and Strategy*, 7(1), 21-24.
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- Gunathilaka, R.P.D., & Rathnayaka, R.M.S.D. (2012). Assessing the adoption of HACCP metasystem by the tea manufactures in Kandy region of Sri Lanka, *International Journal of Agriculture, Environment and Biotechnology*, 5, (4), 463-467.
- Rathnayaka, R.M.S.D., Gunathilaka, R.P.D. & Kithsiri, K.H.S.K. (2011). Assessing the factors influencing on adoption of maximum residue level in the small holding tea sector of Sri Lanka, *Proceedings of the International Symposium on Agriculture and Environment*, Faculty of Agriculture, University of Ruhuna, Sri Lanka, 148.