



## **Sustainable Weed Management in the Commercial Tea Industry: The Case of Hapugastenne Estate, Maskeliya**

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### **Abstract**

Tea sector of Sri Lanka earns US\$ 1.6 billion net foreign exchange annually while caring over one million direct and indirect employments and 2.5 million dependents. Controlling of problematic weeds is important to maintain steady and quality crop levels in commercial tea. Real effectiveness of plant killer chemicals (weedicides) in commercial tea is questionable against the emergence of various unintended and unforeseen detrimental side effects on the eco-systems, human health and tea bushes. The purpose of this study is to demonstrate the economic, environmental and social benefits of Herbicide Free Integrated Weed Management (HFIWM) over chemical weeding in the commercial tea industry.

A commercial scale trial on HFIWM was conducted in Hapugastenne Estate, where natural regeneration of vegetation was allowed to form a ground cover, ceasing the usage of weedicides completely, whilst selective periodic removal of harmful weeds grown in the experimental tea area. These results were compared against the control plots of non-HFIWM tea area in the garden. Analysis showed an improvement in overall performance of tea bushes in the long run with HFIWM, enhancing the product quality and soil environment. Moreover HFIWM approach exhibits many direct and indirect benefits over chemical weeding in commercial tea in the lines of crop productivity, cost of inputs, public health, environment and the socio-economic factors. HFIWM approach was therefore, found economically, socially and environmentally more desirable. The study reveals HFIWM approach could be a sound solution to mitigate many of the constraints faced by the present day commercial tea industry in Sri Lanka.

