Farmer's Intention to Engage in Groundwater Recharging and Management Practices: A Case Study from the *Mottapeththewa* Cascade System

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The *Mottapeththewa* cascade system is located in the *Galgamuwa* area of the*Kurunegala* District. The depletion of vegetation cover, soil erosion, and the recession of the water table are some issues emblematic in many catchments including the *Mottapeththewa* cascade system. The objectives of this study are, to estimate the factors affecting the intention of farmers to engage in groundwater recharging and management practices, and to estimate the factors affecting farmers' engagement in groundwater recharging and management practices. A field survey was conducted using a questionnaire. The descriptive statistics indicate that more than half of the sample had training on groundwater recharging. The conceptual framework based on the Technology Acceptance Model consists of 7 constructs suchas (i) result demonstrability, (ii) self-efficacy, (iii) perceived usefulness, (iv) perceived ease of use, (v) attitude, (vi) intention, and (vii) demographic factors. According to the results of the Structural Equation Model, result demonstrability and perceived usefulness have an indirect effect on intention ($P<0.05$) while attitude and perceived usefulness have a direct effect on intention ($P<0.05$). A multivariate probitmodel was conducted to find the factors affecting farmers' engagement in groundwater recharging practices. The results revealed that the practice of percolation pits is affected by education, farming experience, land area, training on groundwater recharging, annual and perennial crop types, and home gardening($P<0.05$). Constructing percolation wells is affected by the farming experience, landarea, training, vegetables, and field crops ($P<0.1$). The practice of lock and spill drainis affected by home gardening, perennials, and manual irrigation ($P<0.1$). Home gardening, field crops, and manual irrigation affect practicing runoff water harvestingtrenches ($P<0.1$). The practice of organic mulching is affected by education, annuals,and vegetable crop type ($P<0.1$). The findings of the study imply that farmers' engagement in groundwater recharging practices is affected by different farm and demographic factors.

Keywords: Ground water management practices, Ground water recharging, Structural equation model, Technology acceptance model

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