

Identification of environmentally sustainable agricultural practices utilized by farmers in *Mahaweli System H* in Sri Lanka

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Abstract

Sustainable agriculture promotes economic stability for farms and improves quality of livelihood while conserving ecosystem services. Mahaweli Development Programme is one of the country's biggest investments in the agricultural sector. Although Mahaweli System H (MH) is concerned on using its dependent farmers with different sustainable agricultural practices, adequate studies have not been conducted to recognize potential ones. This paper describes the findings of the study conducted on sustainable agricultural practices adopted by farmers in Mahaweli System H. Stratified random sampling technique was applied to select 300 farmers from selected three blocks representing upper end (Mahailuppallama) middle (Thambuttegama) and the lower end parts (Nochchiyagama) of the Mahaweli System H. From each block, individuals were selected randomly to represent 50% of population. Primary data were collected through pre-structured and field tested questionnaire. The data were analyzed by descriptive analysis and chi-square test. Thirty (30) environmentally sustainable agricultural practices were identified. Based on the intensity of practice by the farmers, the practices were categorized as, highly-practised (HP, when > 60% of farmers of the sample practice), moderately-practised (MP, when 30% - 60% of farmers in the sample practice) and lowly-practised (LP, when <30% of farmers in the sample practice). The result of the descriptive analysis revealed that, 100% of farmers practised mix cropping and efficient irrigation plan during cultivation period. Crop rotations, application of natural pest repellants, and incorporation of crop residues for crop cultivations were the HP sustainable agricultural practices. Application of natural ingredients such as ash, animal manure and compost for home-gardens are the MP sustainable agricultural practices. Use of solar power, periodic shift of grazing lands, cut and carry livestock feeding method, legume feeding for livestock, application of organic manure for the cultivated lands, organic farming, use of traditional Kem methods and mulching are the LP sustainable agricultural practices. However, the results of this study show that there is a potential of using environmentally sustainable agricultural practices in Mahaweli System H area but less adopted due to lack of farmers' interest and, awareness and inability to apply sustainable agricultural practices in large scale farmlands. Therefore, facilitating extension services and farmer training programs on sustainable agricultural practices, are needed in order to popularize the adaptation of environmentally friendly, economically viable and biologically feasible agricultural practices in Mahaweli System H in Sri Lanka.

Keywords: *Ecosystem services, Farmer perception, Mahaweli System H, Sustainable agricultural practices*

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