

SUSTAINABILITY ASSESSMENT OF WETLAND PADDY ECOSYSTEM IN URBAN *KADUWELA* AREA, SRI LANKA

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Riverine wetlands are known as one of the most productive ecosystems in the world and have been used for paddy cultivation for eras. *Kaduwela* wetland ecosystem is one of such wetlands in Colombo district of Sri Lanka and situated in western part of the *Kelani* River basin. Long term intensive paddy farming practices have led to loss of original characteristics of this natural wetland ecosystem. This study attempted to assess the sustainability of *Kaduwela* wetland paddy ecosystem and farmers' perception on ecosystem services. A questionnaire survey was conducted for 100 paddy farmers of 'Mahasen farmer organization'. Data were analysed using multiple linear regression. Total sustainability index (TSI) for the paddy farmers with social, economic and environmental components was calculated. Results revealed that only 3% of the farmers are sustainable ($TSI \geq 0.5$) while 97% ($TSI < 0.5$) are vulnerable. Regression results revealed that, profitability, farmer education level, frequency of extension services, women participation in agricultural activities, hired labour/acre and farming experience are significantly ($p < 0.05$) influencing on adoption of sustainable agricultural practices by the paddy farmers in the area. Farmers identified flood controllability and provision of habitats for flora and fauna as the most important services from this ecosystem. Overall results emphasized that, though there are significant drives for sustainability in the system, there are less adoption of sustainable agricultural practices among the farmers due to less government intervention, less availability of organic manure and lack of extension services for the farmers. The study concludes that the *Kaduwela* wetland paddy ecosystem is vulnerable for degradation due to lesser adoption of sustainable agricultural practices by paddy farmers. Hence, the study suggests the need of government support and intervention in promoting sustainable agricultural practices for maintaining ecosystems services in *Kaduwela* wetland paddy ecosystems in Sri Lanka.

Keywords: Ecosystem services, Paddy farming system, Sustainability, Wetland