

**SUSTAINABILITY ASSESSMENT OF PADDY MONOCULTURE AND  
PADDY- MAIZE ROTATION SYSTEMS IN ANURADHAPURA  
DISTRICT, SRI LANKA**

**N.G.P. Liyanage, S.P. Dissanayaka and G.A.S. Ginigaddara**

*Department of Agricultural Systems, Faculty of Agriculture, Rajarata University  
of Sri Lanka, Anuradhapura, Sri Lanka.*

Agricultural sustainability assessment is necessary for scientific understanding of policy and planning for sustainable agricultural development. Majority of the Sri Lankan farmers face difficulties in their cultivation, specially paddy and maize. Therefore, this study attempted to assess the sustainability of paddy monoculture and paddy-maize rotation systems through developing indicators for economic, social and environmental sustainability in Anuradhapura district. Three stage stratified random sampling method was utilized to select 100 farmers in each farming system. A pre-tested questionnaire survey was conducted to collect data. Descriptive analysis and multiple linear regression were used to analyze the data. Result showed that most of respondents were males (89% and 99%), married (89% and 99%) and had completed their secondary education (41% and 57%) in paddy monoculture and paddy-maize rotation system respectively. Majority of farmer's primary occupation was farming in both farming systems. Consequently, farmers' average annual agricultural income was LKR 68,364.00 (per acre) in paddy monoculture farming system and LKR 166,770.00 (per acre) in paddy-maize rotation farming system. According to the Total Sustainability Index (TSI), 72% farmers for paddy monoculture farming system and 83% farmers for paddy-maize rotation farming system were sustainable {TSI = (0.5-1)}. Regression result revealed that cost of production per acre, off farm income, distance to public infrastructure, chemical usage per acre, level of integrated pest management for paddy monoculture farming system and total on farm income per acre, distance to public infrastructure, agrochemical per acre, level of integrated pest management for paddy-maize rotation farming system were significantly ( $p < 0.05$ ) influencing on sustainability. Study concludes that both paddy-maize rotation system and paddy monoculture farming system are sustainable while the paddy-maize rotation farming system reflects higher sustainability in Anuradhapura district, Sri Lanka.

**Keywords:** Paddy- maize rotation farming system, Paddy monoculture farming system, Sustainability