

ASSESSMENT OF THE IMPACTS OF CATCHMENT AREA REHABILITATION OF MAMUNUGAMA TANK CASCADE SYSTEM

W.M.C.L. Wijekoon¹, N.S. Abeysingha¹, S.P. Dissanayake² and E.I.E.
Sulochana³

¹*Department of Agricultural Engineering and Soil Science, Faculty of
Agriculture, Rajarata University of Sri Lanka, Anuradhapura, Sri Lanka.*

²*Queensland Alliance for Agriculture and Food Innovation, University of
Queensland, Brisbane, Australia.*

³*Sri Lanka Red Cross Society, National Headquarters, No.104, Dharmapala
Mawatha, Colombo 07, Sri Lanka.*

Tank Cascade Systems (TCS) in the dry zone of Sri Lanka play a key role in agricultural productivity, water availability and socio-economic significance. This study was conducted to assess the impacts of catchment area rehabilitation of *Mamunugama* tank cascade system by the Climate Resilient Integrated Water Management Project (CRIWMP). The assessment criterion focused on agricultural productivity, water availability and socio-economic significance of the rehabilitation project. The baseline data collected by CRIWMP and the questionnaire survey data collected from 55 selected farmers which represent 10% of cascade farmers from *Ulpeth wewa*, *Athaudagama wewa*, *Ihalathimbiriyawa wewa*, *Kandubodagama Wewa*, *Mamunugama wewa*, and *Werawewa* of *Mamunugama* tank cascade were utilized for this assessment. It could be identified that the tanks which represent the *Mamunugama* cascade have been desilted by 10% from their storage as a positive impact of the project. Cropping intensities (CI), Cultivated Land Utilization Index (CLUI), income and the paddy yield were assessed during 2020 and after three years using the crop information maintained by CRIWMP and it revealed that there were no significant ($p < 0.05$) impacts of the project to the CI, CLUI, income and the paddy yield. The time allocation of housewives in the cascade for collecting drinking water has significantly reduced from 45.18 to 9.91 minutes as a positive impact of establishing a water project by the CRIWMP. According to the data collected, there are positive impacts of the projects on the cascade. However, the identification of project impacts was limited by the non-availability of baseline data.

Keywords: Agricultural productivity, Cropping intensity, Crop productivity index, Cultivated land utilization index, Water availability