

**IMPACT OF AGROWELLS ON LIVELIHOOD AND CROPPING
PATTERNS IN MALWATHU OYA CASCADE-I, ANURADHAPURA
DISTRICT**

R.M.S.H. Rathnayake¹, M.K.N. Kumari¹, A.P.S. Fernando²

¹*Department of Soil and Water Resources Management,* ²*Department of Agricultural Systems,*
Faculty of Agriculture, Rajarata University of Sri Lan Puliyankulama, Anuradhapura, Sri
Lanka

Utilization of groundwater drawn from agro-wells is being increased to meet the demand for water in dry zone agricultural systems with the increase of farmer population. This study examines the socio-economic characters and assesses the changes that have been taken place in cropping patterns and livelihoods of agro-well users in *Malwathu Oya* cascade-I. A series of “face-to-face” interviews, were conducted using a structured questionnaire, with purposively selected sample of 60 respondents. Sample was consist of farmers with agro-wells (n=30) and farmers without agro-wells (n=30). Both qualitative and quantitative techniques were used to analyze data. SPSS and Minitab softwares were used for this purpose. Results revealed that land productivity under agro-wells was significantly higher ($p<0.05$) than that under rain-fed farming. Average cultivated land extent under agro-wells has ranged from 1.0 to 1.5 ac. Cultivated land extent has been increased nearly by 21% with the introduction of agro-wells. Brinjal, Okra and Long bean are the crops that cultivate extensively under agro-wells during the course of study (Yala, 2012). Overall productivity level was measured for these crops using a Crop Yield Index (CYI) and values of CYI are 1.14, 1.06 and 1.01 for Brinjal, Okra and Long beans respectively. It was further evident that mono-cropping in rows is practiced often under agro-wells. Water from agro-well is used for domestic purposes nearly by 87% respondents and almost all respondents are not adopted the conservative irrigation practices like micro irrigation yet. A major conclusion that can be drawn from the study is that, water use under agro-wells still failed to bring the potential water productivities in dry zone cropping systems. Therefore, improving awareness on water management practices and alternative cropping patterns among farming communities is of paramount importance to achieve sustainable water use and maximum productivity under agrowell farming to assure a better livelihood.

Key words: Agro-wells, Cropping patterns and systems, Livelihoods, *Malwathu Oya* cascade-I