ECOLOGICAL AND SOCIO-ECONOMICAL SUSTAINABILITY OF RESTORED TANK CASCADE SYSTEM: A CASE STUDY IN KAPIRIGGAMA TANK CASCADE SYSTEM

H.U.K. Dilanjani[1*#] and A.K.R. Sameera[2]

[1]*Faculty of Social Sciences & Humanities, Rajarata University of Sri Lanka, Mihintale, Sri Lanka*

[2]*Mahaweli Development Authority of Sri Lanka, Colombo 10, Sri Lanka*

**Correspondence E-mail: dilanjani@ssh.rjt.ac.lk, Phone: +94719297665*

#Presenting Author

Abstract: The Tank Cascade System (TCS) served as the essential component of ecological balance, socio-economic sustainability, water management, and rural livelihoods. The TCS and its catchment areas are today under pressure due to the range of human-induced activities. The objective of this study was to identify the appropriate conservation finance mechanisms and to explore the benefits of restoration of TCS as preserve ecological and socio-economic sustainability under the present circumstances. The data from primary and secondary sources were collected. Both qualitative and quantitative analysis methods were used for the study. The study found that the Kapiriggama TCS are today under pressure due to deforestation, pollution, the spread of invasive alien species, and ongoing climate change etc. The TCS and its catchments should be managed for the ecosystem services that it generates. If the tank catchment area and the tank area are conserved, the threat to tanks substantially reduces. By applying conservation finance mechanisms such as 'payment for watershed services' & the 'willingness to pay method' the tank catchment can be conserved so the tank. Further, the study reveals that most of the people (54.3 %) agreed to pay for restoration activities. According to the results, calculated maximum payment for the restoration of the tank cascade system between 500-1500, 1500-2500 and 2500-3500 LKR as 36.1%, 11.2% and 1.7% respectively. Many people were prepared to make labor contribution. Accordingly, there is a positive impact of agreeing to pay money for restoration and willingness to pay for restoration on maximum payment for season in Kapiriggama TCS. It is recommended to implement strategies for effective conservation of the catchment areas to ensure the future sustainability of this cascade.

Keywords: Dry zone; Payment for watershed services; Willingness to pay method