

STRATEGIES FOR SUSTAINABLE MANAGEMENT OF THUMBIKULAMA TANK IN THE DRY ZONE OF SRI LANKA

W.D.D.D. Weragala*#, A.N. Kodithuwakku, and P.B. Dharmasena

Faculty of Agriculture, Rajarata University of Sri Lanka, Puliyankulama, Anuradhapura, Sri Lanka

**Correspondence E-mail: dayanadileekaweragala@gmail.com, Phone: +94764961531*

#Presenting Author

Abstract: Thumbikulama tank in the Bellankadawala cascade in the dry zone of Sri Lanka is among the most degraded, resulting in many social and environmental issues. Poor resilience to flood and drought conditions, alteration of natural ecosystem structure and function, and human-elephant conflicts are the key issues that arose due to the degradation of the Thumbikulama tank. However, considering its potential to facilitate crop production in the command area, rehabilitation of Thumbikulama tank is timely essential. The aim of this study was to examine a suitable strategy for the sustainable rehabilitation of Thumbikulama tank. Primary data were collected from 120 farmers from each Grama Niladhari divisions: Demunnewa, Vayaulpotha, and Bellankadawala through a questionnaire survey and focus group discussions with randomly selected 30 key persons. Data were qualitatively analyzed through participatory need analysis, SWOT, and thematic analysis methods. This study identified sustainable maintenance and operation (90%), physical and ecological rehabilitation (88%), development of infrastructure and other agricultural activities (62%), cascade-based interventions (60%), and institutional development (35%) as key areas of the development strategy. Results show that sustainable maintenance and operation are essential for the tank's sustainable management. Participatory forest management, land consolidation, development policy and regulations, and routing maintenance arrangements are identified as the key actions to be taken to maintain forest tanks for an extended period and ensure the system's sustainability.

Keywords: Development strategy; Ecosystem; Participatory Forest management; Rehabilitation