

# THE ROLE OF DEMOGRAPHIC AND CULTURAL CHANGES ON THE SUSTAINABILITY OF RANPATHVILA TANK CASCADE OF SRI LANKA

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**Abstract:** : The tank cascade system (TCS) is a particular ecosystem centred on a series of artificial reservoirs where water flow is regulated from a smaller to larger along the topography to control drought and flood. The system was constructed in various ancient periods and has the potential to be used for managing the impacts of climate change. However, the system is undergoing rapid degradation owing to the present rapid environmental and social transformation. It is believed that the indigenous knowledge system of the Sinhala community was the driving force of the sustainable existence of the system. Many TCS have undergone change including the change in the demographic structure, particularly incorporation of Muslim community settlements. Ranpathwila, a TCS in Anuradhapura, Sri Lanka, is one of them. The question is how this assimilation affects the nature of the cascade system. The study aimed to assess the effects of the demographic transformation on the sustainability of the Ranpathwila TCS by adopting qualitative data collection. Primary data collection is based on (90) interviews, administered to capture all four reservoir-based five settlements with key person interview methods, analysis of historical records and text analysis methods and observations. It is evident from the analysis, that demographic assimilation, particularly the integration of Muslim settlements, has no considerable negative effects on the cascade ecosystem. Further, there is an attitudinal transformation from belief in supernatural powers to modernity parallel to the urbanization. It also noted that, this transformation is vitally important to safeguard social harmony. There is a potential to sustainably maintain the system upon the strength of the social harmony among different communities as narrated in the historical records. The study recommends populating the study to capture broader spatial extent to test the validity of the findings. Further, assess the system's functions expand from traditional ones to modern functions such as expansion of fisheries and tourism sector.

**Keywords:** Culture; Local knowledge; Socio-economic transformation; Social context; Village tank ecosystem