

MORPHOMETRIC ANALYSIS ON ANCIENT IRRIGATION TANKS IN INTERMEDIATE CLIMATE ZONE (ACCORDING TO PANDUWASNUWARA)

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An ancient reservoir known as ‘Vapi’ or a ‘Wewa’ or a tank is a magnificent piece of technology in the ancient hydraulic system of Sri Lanka. Most of researches have worked on ancient irrigation tanks in the dry zone of Sri Lanka. Also there has been not conducted morphometric analysis of ancient irrigation tanks in Sri Lanka. Main objective of the research is to analyses the geographical distribution of ancient tanks based on the Morphometric Analysis in intermediate climate Zone. The study area was selected as Panduwasnuwara West DSD in Kurunegala district belongs to intermediate climate zone. Accordingly, 404 ancient irrigation tanks were selected for this analysis by using relative relief. However, 66 irrigation tanks were selected for ariel aspects. Accordingly, under morphometric analysis, Gravelliest Shape Index, Elongation Ratio, Absolute Relief, Relative relief and Dissection Index were calculated. The majority of irrigation tanks spreads over the intermediate zone can be identified as minor irrigation tanks. Quantitatively, the area of a minor tank in the intermediate zone is about 0.03 km² and dry zone has three times of the area of a minor ancient irrigation tank. 62% of the ancient irrigation tanks in Panduwasnuwara has been located in between 30 m to 50 m contour lines. After calculating Absolute Relief, and Relative relief the value ranges from 50m to 65m (Low to Low-Medium), and from 20 -27 (Low to Low-Medium) in range with respectively. The range from 0.30 - 0.44 value was obtained after calculating the Dissection Index. Further, Irrigation tanks were analyzed as circular, elliptical, slightly diagonal, and elongated by using Gravelliest Shape Index. The majority of irrigation tanks spread over the intermediate zone can be identified as minor irrigation tanks. Most of the irrigation tanks located in the Panduwasnuwara are elliptical in shape.

Keywords: Morphometric Analysis, Ancient Tanks, Panduwasnuwara, Ariel Aspect, Relative Aspect

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