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Analyzing the Dependence of Major Tanks in the Headwaters of the Aruvi Aru Catchment on Precipitation.

Applying Drought Indices to Meteorological and Hydrological Data

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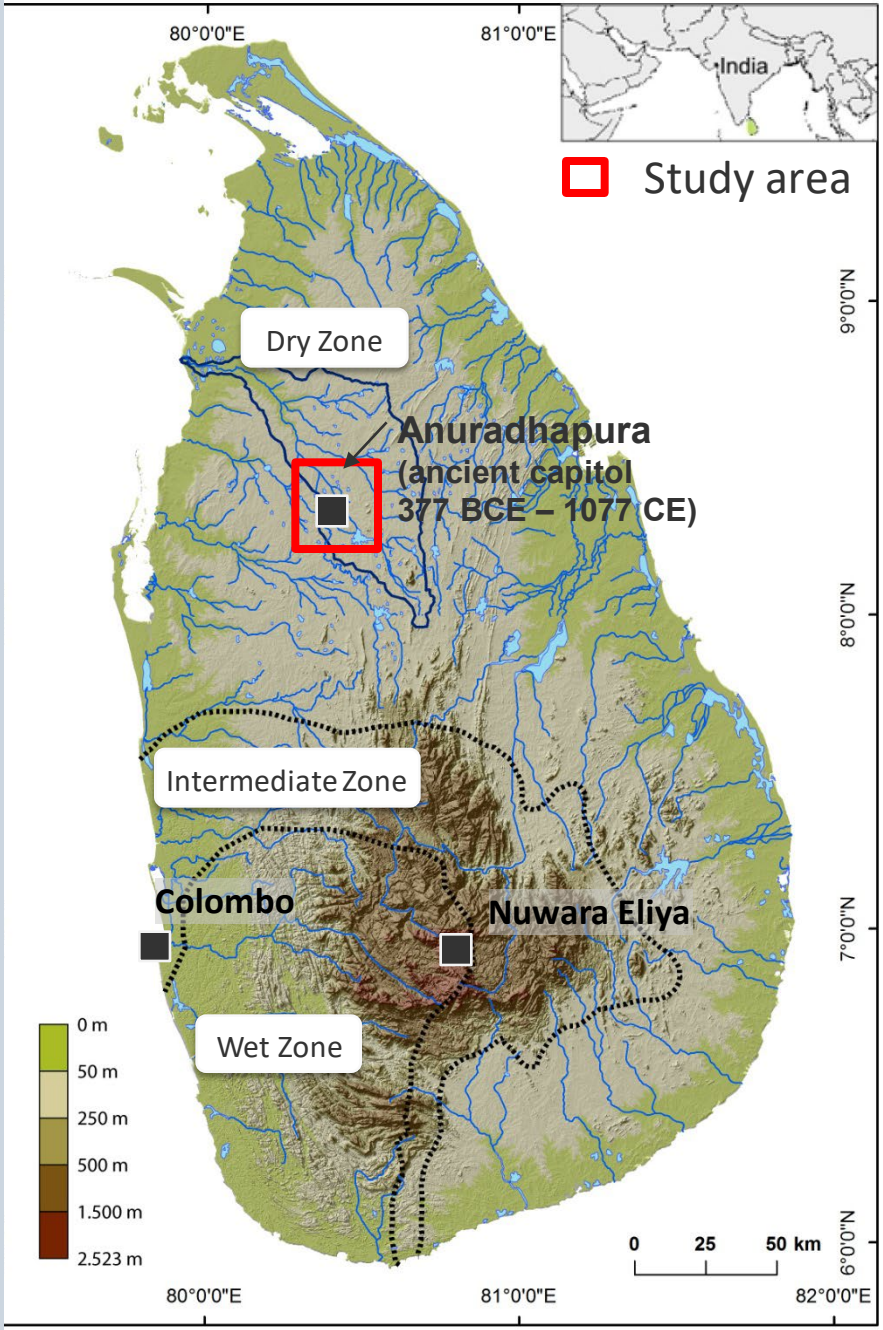
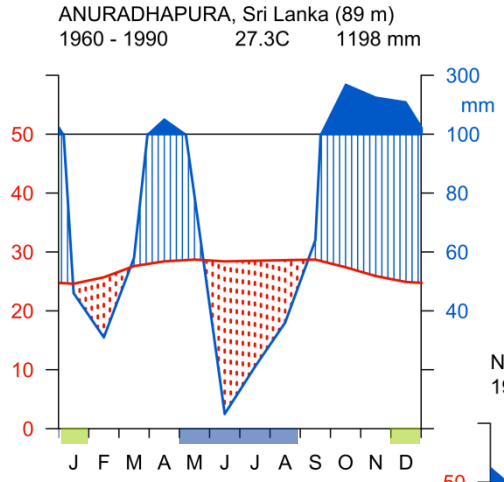
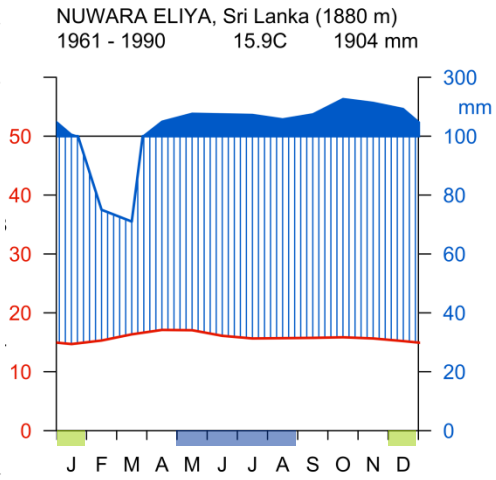
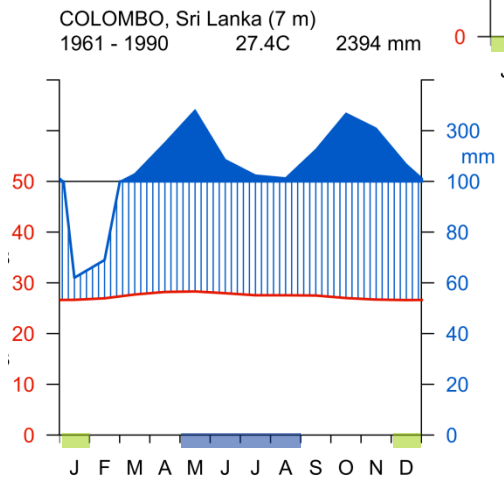


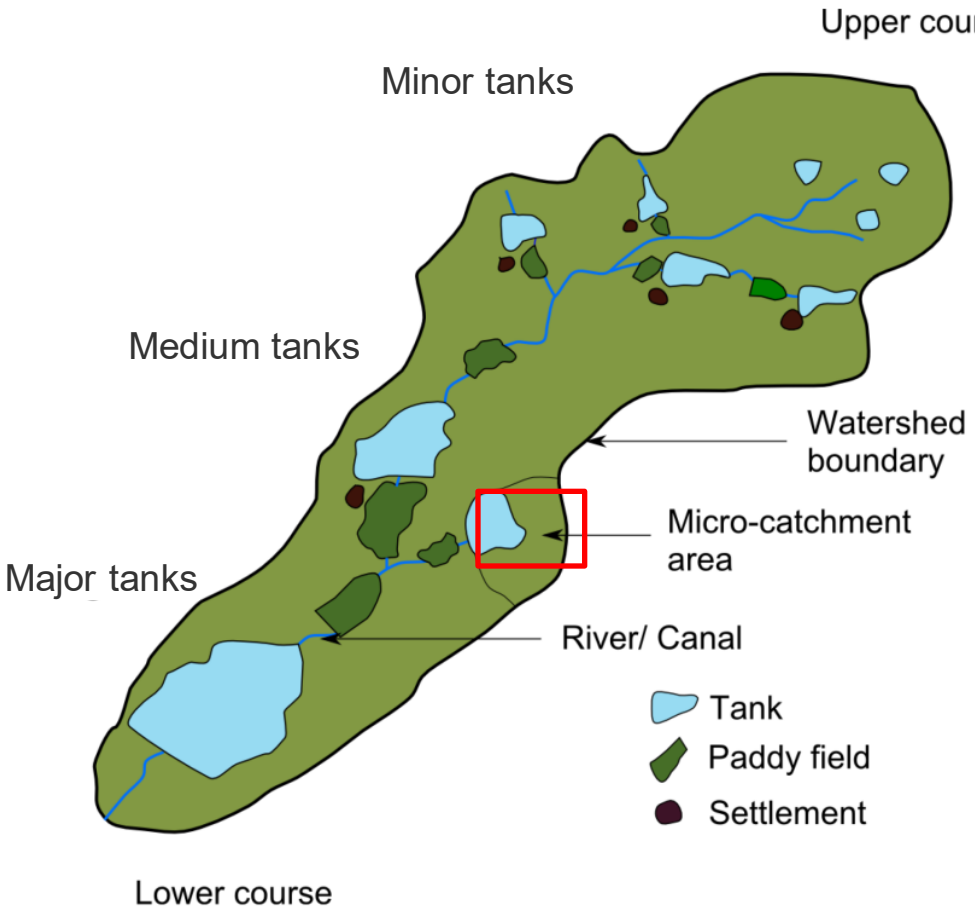




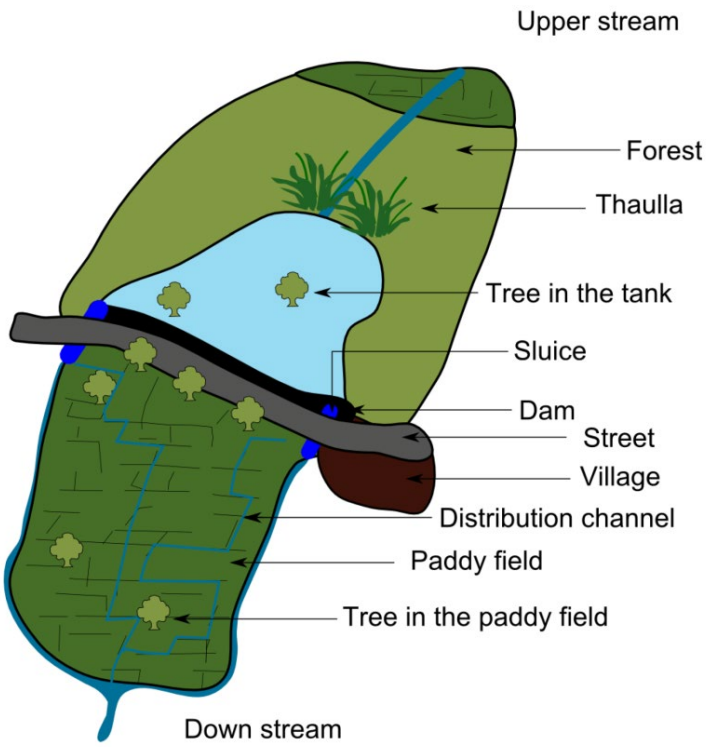


NE Monson

SW Monson



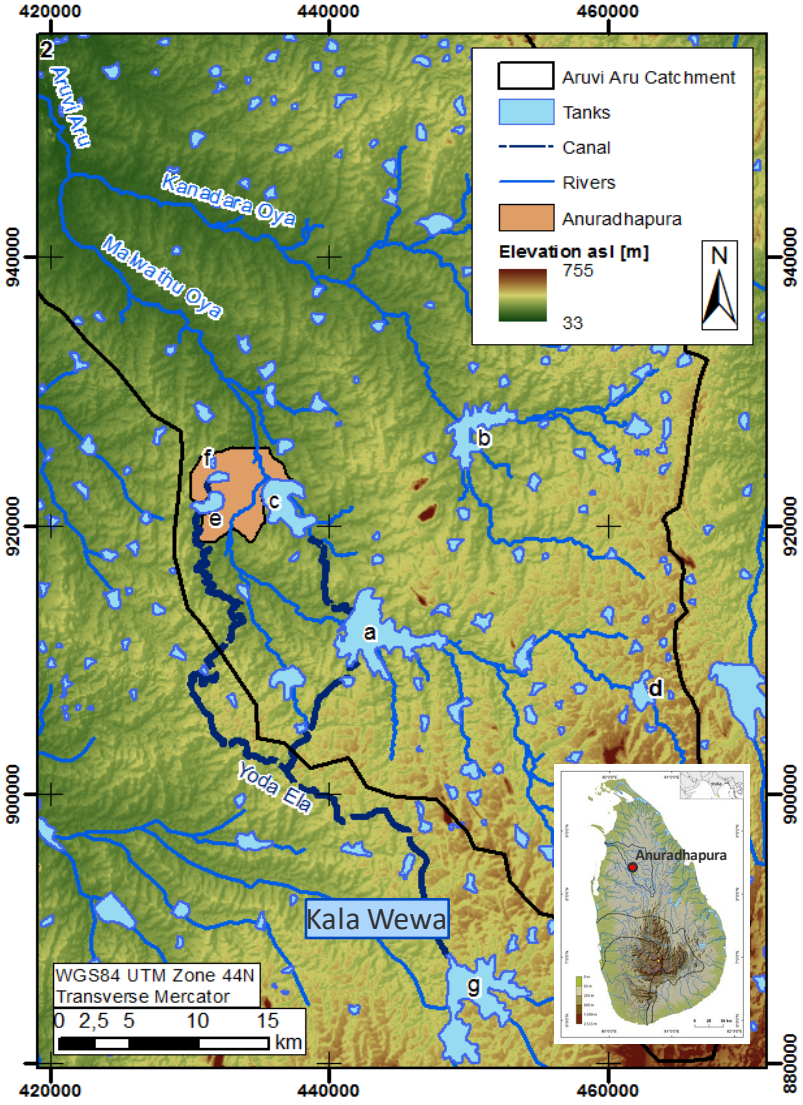
Schematic representation of a typical tank cascade system

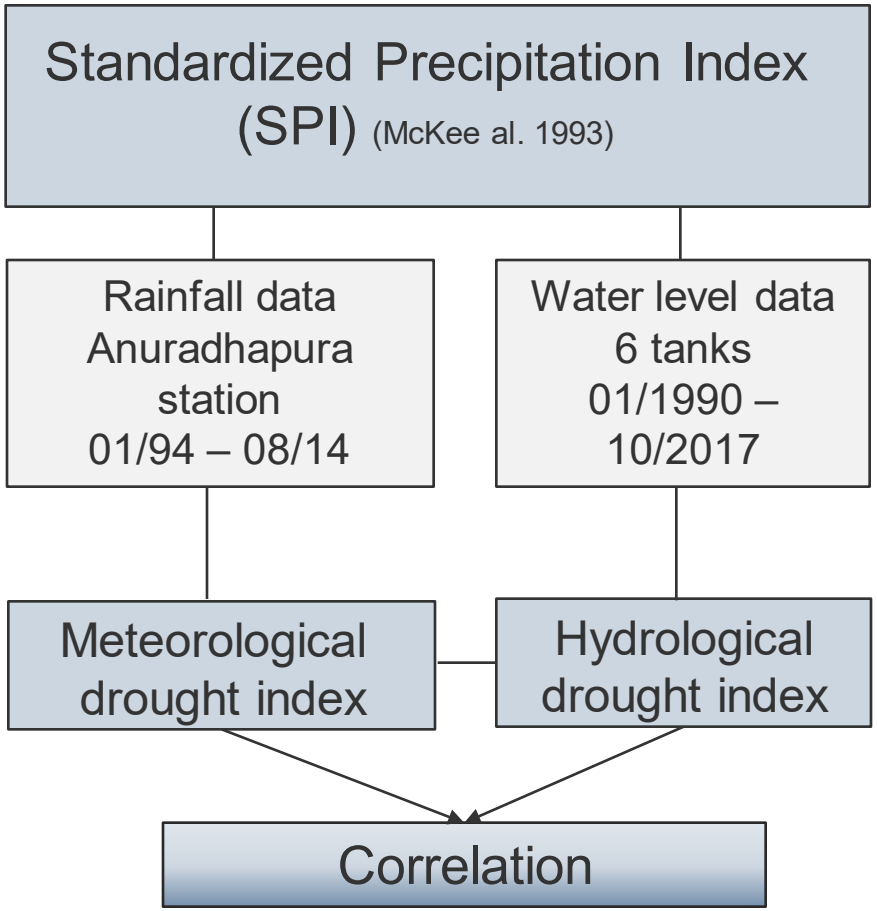


Schematic representation of a typical village tank ecosystem

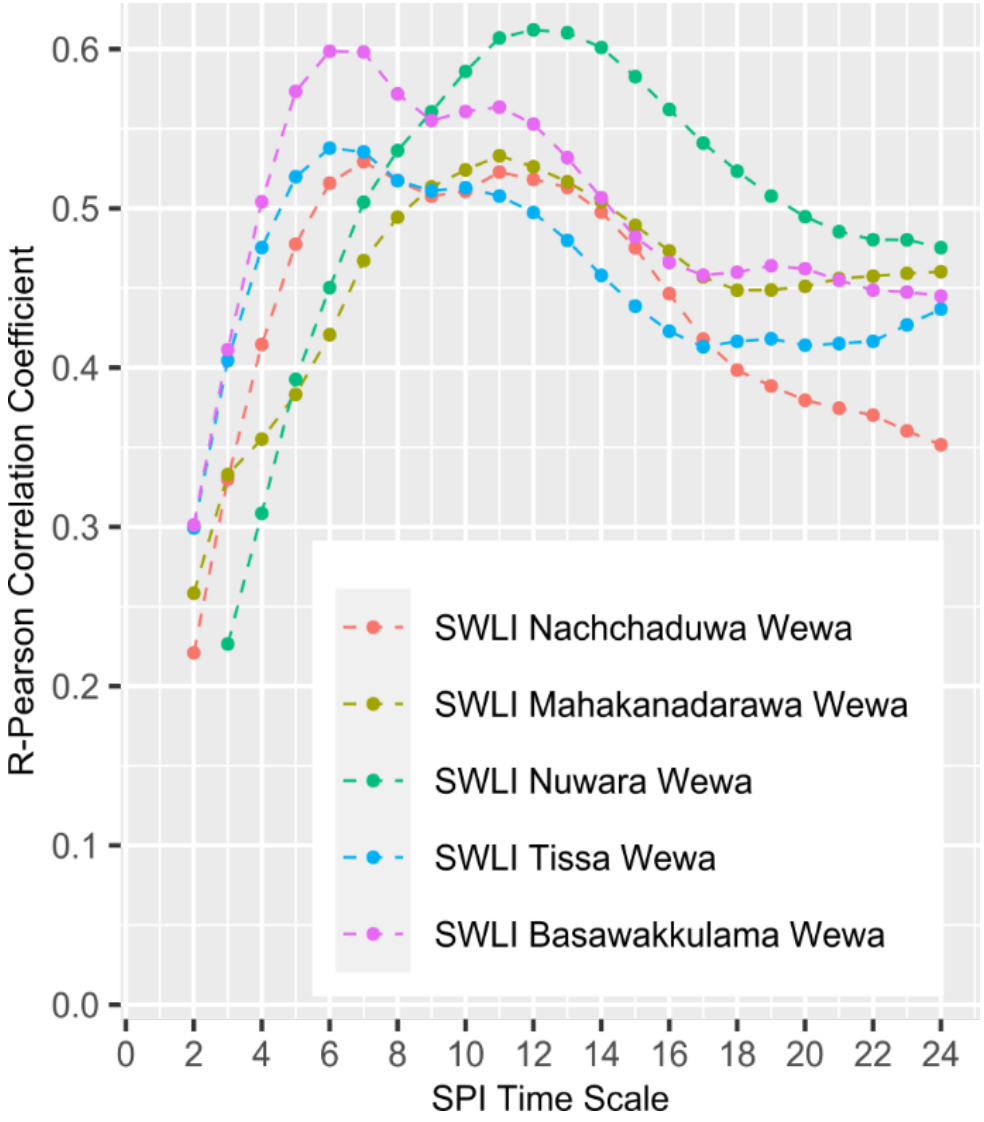
(Schütt, Bebermeier et al. 2013. Die Erde, modified after Panabokke et al. 2002)

Assessment of the dependency of wewa water level on rainfall





(Saase, Bebermeier et al. 2020. Water)



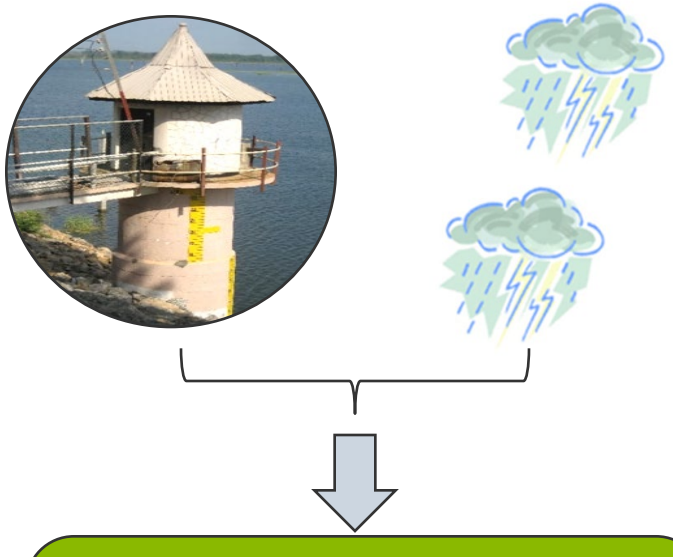
Pearson R correlation values for the SPI time scales 2–24 months and SWLI for each tank (points = calculated Pearson R correlation values).

(Saase, Bebermeier et al. 2020. Water)

Assessment of the dependency of wewa water level on rainfall

Problem

water level $\overset{?}{=}$ f {precipitation}



Proxy for evaluating the efficiency of the systems in the hinterland of Anuradhapura

Outcomes

water level = f {precipitation, water management, upstream catchment size}

- Today, near normal precipitation is sufficient to fill the tanks.
- Small catchments react faster than large catchments.
- Water balance is highly modified by the introduction of water harvesting system.