

C-02: Ground water variation of a catchment in Sri Lanka

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Rainfall in Sri Lanka even though expressing seasonal regularity, it is the climate, topography, vegetation and geo-soil condition that control the retention or the conversion of this rainfall into discharge that flows out into streams and rivers. Thereby the water retention ability would be unique to a particular location and this would even give rise to agricultural activities that are unique for a particular geographic location. Therefore it is imperative to know the variation of water content, specially in the upper stratum of the soil layer, and moreover in agricultural areas, so that farmers could be advised better on possible cropping patterns.

The temporal variation of ground water of the upper soil stratum of the Nilwala river basin has been investigated by means of a simple water balance and the soil moisture accounting routing model. The sub-catchments of the Nilwala river basin bounded by the river gauging points Pittebeddera and Bopagoda, rainfall data at Goluwawatte and evaporation data at Kottawa for the years 1985 to 1993 have been used in the analysis.

It has been found that there is a noticeable rhythmic pattern in the temporal variation of water content. On the average, the water content for the months May, June, August, September and October remained almost constant and above average (350 mm). However for the months Nov., Dec., Jan., Feb., Mar., Apr. and July there is an appreciable variation and drop in water content (200-300mm). Particularly in the months of March and April it would drop by nearly 40% from the average (300mm). This was observed on the average for all years under consideration.