**Estimation of water balances using GROWA model: case study of the Far-North region, Cameroon**

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Estimating water balance of an area is essential for predicting water yields, designing irrigation and supply projects, managing water resources and their associated environmental concerns, and negotiating disputes, contracts, or treaties involving water. GROWA model is a water-balance model that was developed, calibrated and validated for central-European site conditions. The model conceptually combines distributed meteorological data (precipitation and potential evapotranspiration) with distributed site parameters (land use, soil properties, slope gradient, slope exposure, mean depth to groundwater) to facilitate the calculation of long-term annual averages of water-balance components. Previous applications (in countries such as Germany, Greece, Turkey, Slovenia etc but never in an African country) of the model have proven to be very reliable. In this paper, individual modules of the GROWA model were adapted in order to cope with the site specific characteristics of the Far-North region, Cameroon. The results obtained were state-of-the-art maps of water balance components such as real evapotranspiration, total runoff, direct runoff and groundwater recharge. Results could be used for water resources planning in the semi-arid region.

**Keywords**: meteorological data, water balance model, water resources planning, semi-arid region, site parameters