J. Int. Environnemental Application & Science, Vol. 8 (3): 336-342 (2013)

Evaluation of FAO – 56 Penman-Monteith in Estimating Reference Evapotranspiration and Real Evapotranspiration, Application in Albania

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Received June 05, 2013; Accepted September 03, 2013

Abstract: The principal weather parameters affecting evapotranspiration are radiation, air temperature, humidity, wind speed. Several procedures have been developed to assess to evapotranspiration rate from this parameters. The evaporation powered at the atmosphere is expressed by the reference crop evapotranspiration (ET_0). The reference crop evapotranspiration represents the evapotranspiration from standardized vegetated surface. Several models have been used in computing reference evapotranspiration and they require local calibratiation in order to validate their usage. Climatic data used in computing reference evapotranspiration (ET_0) in some region with diverse climate condition in Albania. Some models had been proposed by many authors include original Penman, Thornthweit, Blaney Cridel, Turc, Penman Monteith etc. In this study the model of FAO-56 Penman- Monteith method used to estimate Reference Evapotranspiration (ETo) over a range of climate in Albania based on weather data time period. The values of Reference Evapotranspiration vary 500-800 mm on the field area, 800-1000 mm on the hilly area and 1000-12000 mm on the mountain area. The values of Real Evapotranspiration for the field area vary about 500 mm, 600 mm on the hilly area and 800 mm on the mountain area. Pluviometric deficit (DE) in Albania varies about 200mm on the coastal area to 2500 ÷ 3000mm on the mountain. The evaluation of the evapotranspiration and its components, including the evapotranspiration regionalization are presented. The ET values have been updated and plotted on the 3D digital map, by employing G.I.S system.

Keywords*: Evapotranspiration,empirical method, FAO-56 PM, G.I.S.*

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