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Tracing the allocation of water in rainfed rice ecosystem by partitioning evapotranspiration of rainfed rice (*Oryza Sativa* L.)

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To understand productive and unproductive water use of crop production, partitioning evapotranspiration (ET) into evaporation (E) and transpiration (T) is important. Water movements within the eco-hydrologic cycle of agroecosystems can be traced by stable oxygen isotopes of water (δ^{18}O) and plant transpiration and soil evaporation can also be estimated by tracing the δ^{18}O. We quantified the contribution of transpiration to total ecosystem evapotranspiration of rainfed rice field by a stable oxygen isotope approach and FAO 56 dual crop modelling approach. Our study aims to provide quantification of ecosystem water cycle of rainfed rice by partitioning productive and unproductive water use since productivity and water use of rice which is a highly water demanding agroecosystem, is under intense research. Crop season total evapotranspiration fluxes from rainfed rice was mainly dominated by transpiration (T to ET contribution (T/ET) = 65%) and domination of transpiration over evaporation fluxes was noted since early vegetative stage (Leaf Area Index = 0.8 m^2 $m^{-2)}$ until harvesting. T/ET of rainfed rice fluctuated with changes in soil water content (SWC) and the highest T/ET was found at SWC of 0.34 m^3 m^{-3}, during seedling stage. Our results demonstrate that partitioning ET by FAO 56 dual crop model is in a good agreement with δ^{18}O isotope based ET partitioning results. Using monthly mean values of leaf resistance and vegetation index derived crop coefficients instead of original fixed parameters of the FAO 56 dual crop model resulted better agreement with δ^{18}O isotope based ET partitioning.