



From Water Dynamics to Rainfed Landscapes with GRASS GIS

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Variability in water availability is a key determinant of risk and constraint to productivity in rainfed agricultural systems. Understanding the dynamics of water availability across both spatial and temporal scales is essential to managing water and optimize production. This research proposes to look at both the physical measurement of water availability and water user perceptions of landscapes and water availability.

Evapotranspiration makes up about three quarters of the transiting water in a landscape, it is composed of evaporation (water bodies, soil) and transpiration, the vegetation biomass growing quantity. This work will develop a methodology for defining landscapes based on water dynamics to be used at the interface of WLE research. The GRASS GIS Imagery, Landscape and Temporal toolkits form the basis of the methodological development, from evapotranspiration modeling and landscape analysis to spatio-temporal analysis.