

Abstract

This study analyzed recent extreme weather events in Rwanda with emphasis on drought during March-May (MAM) season using Z-index. Composite analysis identified the years 2009 and 2010 as the most recent dry and wet years respectively. Analysis of the interannual variability over the period of 1981-2010 shows that approximately 30% and 27% of the observed rainfall events were drought and flood cases, respectively. The mean MAM rainfall ranges from 90 to 180 mm in the wet year (2009), whereas during the dry year (2010), rainfall was poorly distributed both in space and time. The dry year experienced generally dry easterly winds, with almost uniformly increasing positive wind speed variation with height. The diagnosis of the evolution of Mascarene High (MH) ridge shows that during the dry year, the ridge is anomalously displaced to the west of its normal position, leading to rainfall deficit over the entire eastern Africa. The dry year exhibited a wide spread moisture divergence anomaly at low level. The noted circulation anomalies associated with the dry event are important in future monitoring of occurrence of drought.