Meteorological Drought Index

The Meteorological Drought Index (MDI) is defined as the cumulative precipitation (P_{cum}) over the cumulative potential evapotranspiration ($ET_{P,\ cum}$) expressed as a percentage on a timescale of one month. It is formulated as follows:

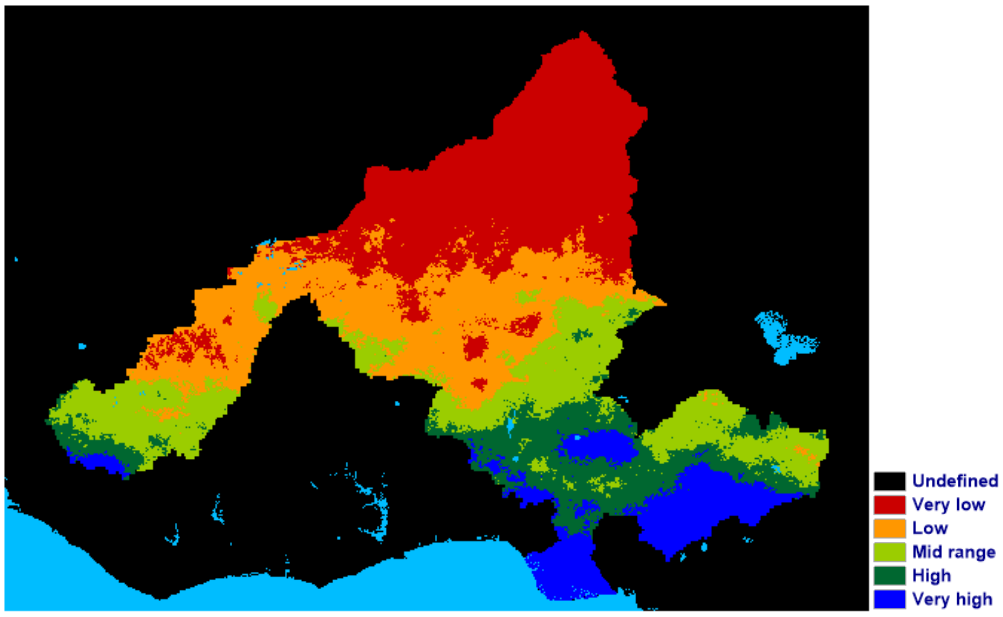
$$MDI = P_{cum} / ET_{P,\ cum} \quad [\%]$$

A meteorological drought index less than 100% indicates that precipitation was lower than potential evapotranspiration. Consequently, precipitation could not supply enough water for optimum plant growth. A MDI higher than 100% however, does not necessarily mean that optimum plant growing conditions are met, as an unknown part of the rainfall is lost to runoff and deep percolation. A meteorological drought index of more than 100% does imply that there was some runoff or deep percolation. The following classification has been made:

Classification	MDI [%]
Very low	<50
Low	50 to 100
Mid-range	100 to 150
High	150 to 200
Very high	>200

To compare drought in an individual year with previous years, a difference meteorological drought index is use. The difference index is formulated as follows:

$$MDI_{dif} = (MDI_{act} - MDI_{10yravg}) / MDI_{10yravg} \quad [\%]$$



MDI for June 2017