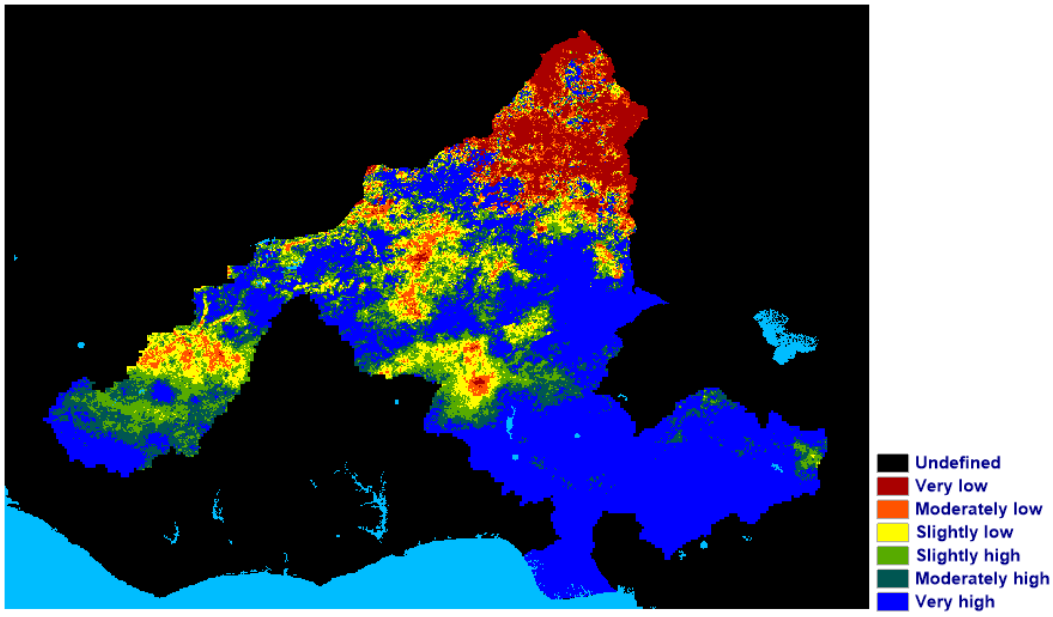
Hydrological Drought Index

The hydrological drought index (HDI) indicates how precipitation relates to actual evapotranspiration. It is defined as the cumulative precipitation (P_{cum}) over the cumulative actual evapotranspiration ($ET_{a,\ cum}$), over the period of one month, expressed as a percentage. It is therefore a measure of the water amount that remains available for deeper percolation or surface runoff. It is formulated as follows:

$$HDI = P_{cum} / ET_{a,\ cum} \qquad [\%]$$

An HDI below 100% means that actual evapotranspiration has been higher than precipitation in that month; therefore stored water (in biomass, soil and surface water) has been depleted. An HDI above 100% means that precipitation has been higher than actual evapotranspiration in that month; therefore runoff and deeper percolation has occurred. The following classification has been made:

Classification	**HDI [%]**
Very low	<50
Moderately low	50 to 75
Slightly low	75 to 100
Slightly high	100 to 125
Moderately high	125 to 150
Very high	>150



HDI for June 2017

Also for this drought index, there is a variant to compare an individual year drought index with the years before. This is the difference hydrological drought index and is formulated as follows:

$$HDI_{diff} = (HDI_{act} - HDI_{10yravg}) / HDI_{10yr} \qquad [\%]$$