



Analysis of the General Climatic Conditions of Somalia in Support of Drought Monitoring

$$PDI_{i,m} = \sqrt{\left(\frac{\frac{1}{n} \sum_{k=1}^n R_{m,(i-k)}^{(P)}}{R_{m,i}^{(P)}} \right)} * \frac{\sum_{j=1}^5 P_{i,(m-j)}}{\frac{1}{n} \sum_{k=1}^n \left[\sum_{j=1}^5 P_{(i-k),(m-j)} \right]}$$

$$VDI_{i,m} = \sqrt{\left(\frac{\frac{1}{n} \sum_{k=1}^n R_{m,(i-k)}^{(NDVI)}}{R_{m,i}^{(NDVI)}} \right)} * \frac{\sum_{m=1}^5 NDVI_{i,(m-j)}}{\frac{1}{n} \sum_{k=1}^n \left[\sum_{j=1}^5 NDVI_{(i-k),(m-j)} \right]}$$

$$TDI_{i,m} = \sqrt{\left(\frac{\frac{1}{n} \sum_{k=1}^n R_{m,(i-k)}^{(T)}}{R_{m,i}^{(T)}} \right)} * \frac{\frac{1}{n} \sum_{k=1}^n \left[\sum_{j=1}^5 T_{(i-k),(m-j)} \right]}{\sum_{j=1}^5 T_{i,(m-j)}}$$

$$CDI_{i,m} = (PDI_{i,m-2} + TDI_{i,m} + VDI_{i,m}) * \frac{1}{3}$$

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List of Abbreviations

AEZ	Agro-ecological zones
AMC	Antecedent moisture content
AVHR	Advanced very High Resolution
CDI	Combined Drought Index
CV	Coefficient of variation
DEM	Digital Elevation Model
EV1	Extreme value type 1 distribution
FAO	Food and Agriculture Organisation of United Nations
FSAU	Food Security Analysis Unit
FSAU	Food Security Analysis Unit- Somalia
GEV	General Extreme value distribution
GHA	Great Horn of Africa
ICPAC	IGAD Climate Prediction and Applications Center
IGAD	Inter-Governmental Authority for Development
IDWA	Inverse Distance Weighted Average
ITCZ	Inter tropical Convergence Zone
IWRM	Integrated Water Resources Management
NOAA	National Oceanographic and Atmospheric Administration
KMD	Kenya Meteorological Department
PET	Potential Evapotranspiration
PDI	Precipitation Drought Index
RC	Runoff coefficient
RFE	daily rainfall estimates
RH	Relative Humidity
SWALIM	Somalia Water and Land Information Management
SWIMS	Somalia Water Source Information Management System
TDI	Temperature Drought Index
UNCEF	United Nations Children's Fund
UNDP	United Nations Development Programme
UNESCO	United Nations Education, Science and Cultural Organization
VDI	Vegetation Drought Index
WMO	World Meteorological Organization

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