Abstract

The Greater Horn of Africa (GHA) is prone to extreme climate events such as droughts and floods. The need for proper quantification of drought impacts and monitoring and reporting of drought development is of critical importance in politically, economically and environmentally sensitive countries of GHA such as Somalia. Agricultural drought in Somalia is studied using the Normalized Difference Vegetation Index (NDVI) and the Vegetation Condition Index (VCI), Vegetation Health Index (VHI), Temperature Condition Index (TCI) and Agricultural Stress Index (ASI) based on AVHRR and MODIS satellite data. Additionally, satellite-derived Standardized Precipitation Index (SPI) and Soil Moisture are used. Analysis utilized Software for the Processing and Interpretation of Remotely sensed Image Time Series (SPIRITS) and Agricultural Stress Index System (ASIS) toolbox. SPI, VCI, NDVI and ASI were found to be complementary and sensitive indicators to drought conditions. However, TCI was found to be an unreliable indicator for drought assessment. Despite the spatial and temporal variability of wetness or dryness throughout the country, 2011 recorded the most severe drought conditions. However, Agricultural droughts are common with mild to moderate ones occurring every 3 - 4 years and serious drought occurring every 8-10 years. The results of this study can be used for the development of a regional drought monitoring system and thus an invaluable role for drought preparedness