

ISBN	978-93-88122-14-6
Website	www.veltech.edu.in
Received	13-May-2020
Article ID	NISDCE228

VOL	01
eMail	nisdce@veltech.edu.in
Accepted	28-May-2020
eAID	2020.nisdce.228

ASSESSMENT OF DROUGHT CONDITION BASED ON STANDARDIZED PRECIPITATION INDEX AND SOIL MOISTURE CONDITION- A CASE STUDY IN PARTS OF CHENGALPATTU DISTRICT, TAMILNADU, INDIA

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ABSTRACT: The frequency of extreme weather events is expected to increase, in general, so it is imperative to focus on the studies of day to day changes in the land surface. Soil moisture plays an important role in energy balance on the surface, runoff, drought and climate change conditions. The study deals with various aspects of the soil moisture determination and its comparison between pre-monsoon and monsoon season. Rainfall data of the study area was used for computing the Standardized Precipitation Index (SPI) to determine the severity of the drought. Soil samples collected were used for performing gravimetric analysis, to identify the percentage of moisture in the soil. The spectroradiometer helps in obtaining the reflectance pattern of soil. Soil moisture sensor along with the Arduino software was used to identify soil moisture in the field. The main aim of the study is to compare the seasonal changes, to assess the precision of soil moisture. From the results, it is evident that there is a dry to a severely dry condition in the study area which indicates the onset of drought.

Keywords: Spectroradiometer; Soil moisture sensor; Gravimetric analysis; SPI; Drought condition

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