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**CONTRIBUTOS DA CIÊNCIA PARA A REDUÇÃO DO RISCO.
AGIR HOJE PARA PROTEGER O AMANHÃ**

**CONTRIBUTION OF THE SCIENCE FOR DISASTER RISK MANAGEMENT.
ACTING TODAY, PROTECTING TOMORROW**

RESUMOS

Abstracts

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(RESUMOS / ABSTRACTS)

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CHANGE TRENDS IN DROUGHT SUSCEPTIBILITY: A CASE STUDY USING SPI IN NORTHEAST PORTUGAL

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ABSTRACT

Clear changes in global climate are being reported and future climate scenarios keep alerting to relevant changes in mean air temperature and in rainfall distribution patterns. Increase in weather conditions variability in recent years prospects higher frequency and severity of extreme events, namely an extension of drought periods. Much of Trás-os-Montes mountain region, northeast Portugal, are drylands enduring soil degradation processes, therefore facing medium to high susceptibility to desertification and drought.

This study aimed at analyzing temporal change trends in the extension of drought periods in in northeast (NE) Portugal. The Standardized Precipitation Index (SPI) was computed with monthly precipitation data series (made available by SNIRH - Sistema Nacional de Informação de Recursos Hídricos) of weather stations that cover the main climatic domains of the region (humid to semiarid) and are considered as reference due to their long term records (>70 years): Vinhais, Alfândega da Fé, Macedo de Cavaleiros, Malhadas, Carviçais and Montezinho. SPI response time scales have been set to 1, 3 and 6 months, and were obtained for three climatological normal: 1931-1960, 1951-1980 and 1971-2000. The analysis focused on the overlapped periods (decades of 1951-1960 and 1971-1980, with 120 months each), where SPI class frequencies issued from each one of the two overlapping normal were compared.

As SPI response time scale increases (1 to 6 months) and a more recent climatological normal is considered (1931-1960 to 1971-2000), the frequencies of dry and wet months in the overlapped periods increased ate the expenses of the normal months' frequencies. Frequencies of months with severe and extreme drought during the overlapped periods increased as well, more visibly for the SPI 3 months time scale and for stations located in semi-arid zones.

The general change trend observed in the study confirms a progressive increase in drought extension and severity in a region already facing desertification threat as NE Portugal.

Keywords: SPI, climate change, aridity, desertification.
