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Historical changes in drought characteristics and their impact on vegetation cover over Madagascar

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Additional figures:

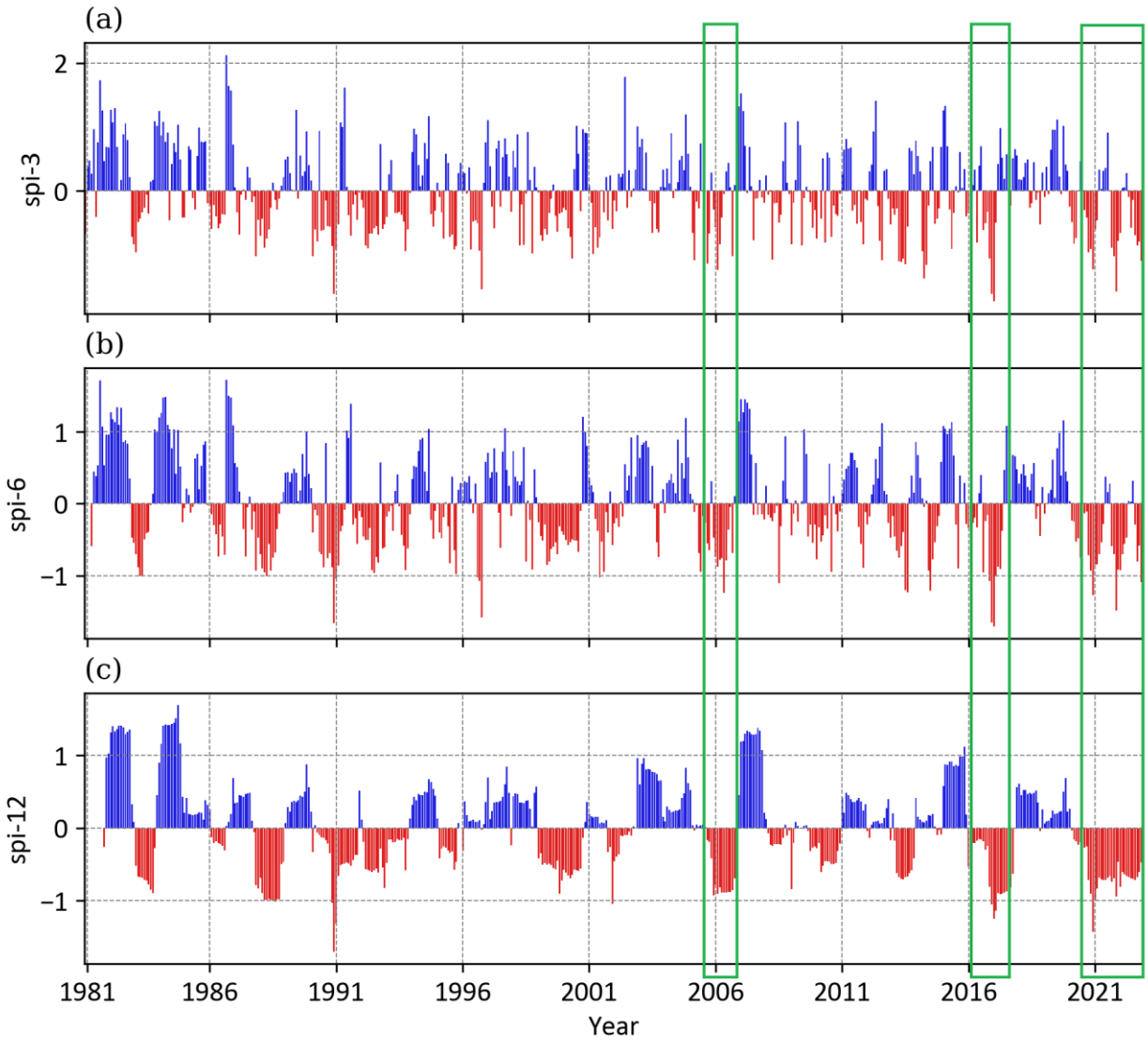

Figure S1: SPI values from the ensemble mean of CHIRPS and ERA5 averaged over the whole Madagascar during the period 1981–2022. a) represents SPI at three months' timescale (SPI-3), b) at 6 months' timescale (SPI-6) and c) at 12 months' timescale (SPI-12). The areas within the green rectangles are the "Event-I", "Event-II" and the "Event-III", respectively. (Detailed clarification about the selection of the three Events is found in the method section).

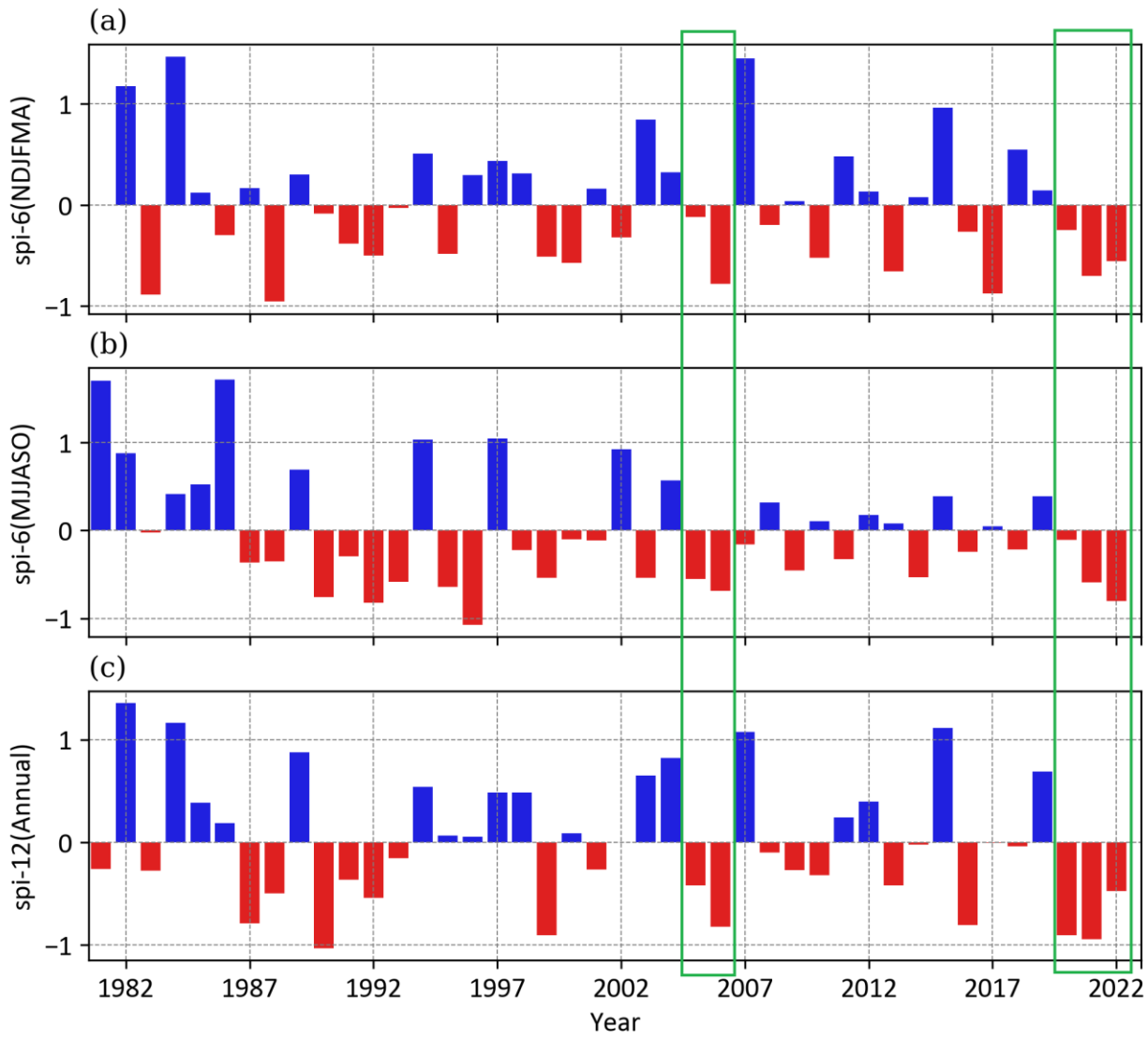

Figure S2: Seasonal and annual SPI averaged over the whole Madagascar. a) and b) represent seasonal SPI selected from SPI-6 to represent the wet season from November to April (NDJFMA) and the dry season from May to October (MJJASO), respectively of each year. c) represents annual SPI selected from SPI-12 to represent the annual timescale of January-December of each year. The areas within the green rectangles are the "Event-I" and the "Event-II", respectively. (Detailed clarification about the seasonal and annual SPI timescales and the selection of the two Events is found in the method section)

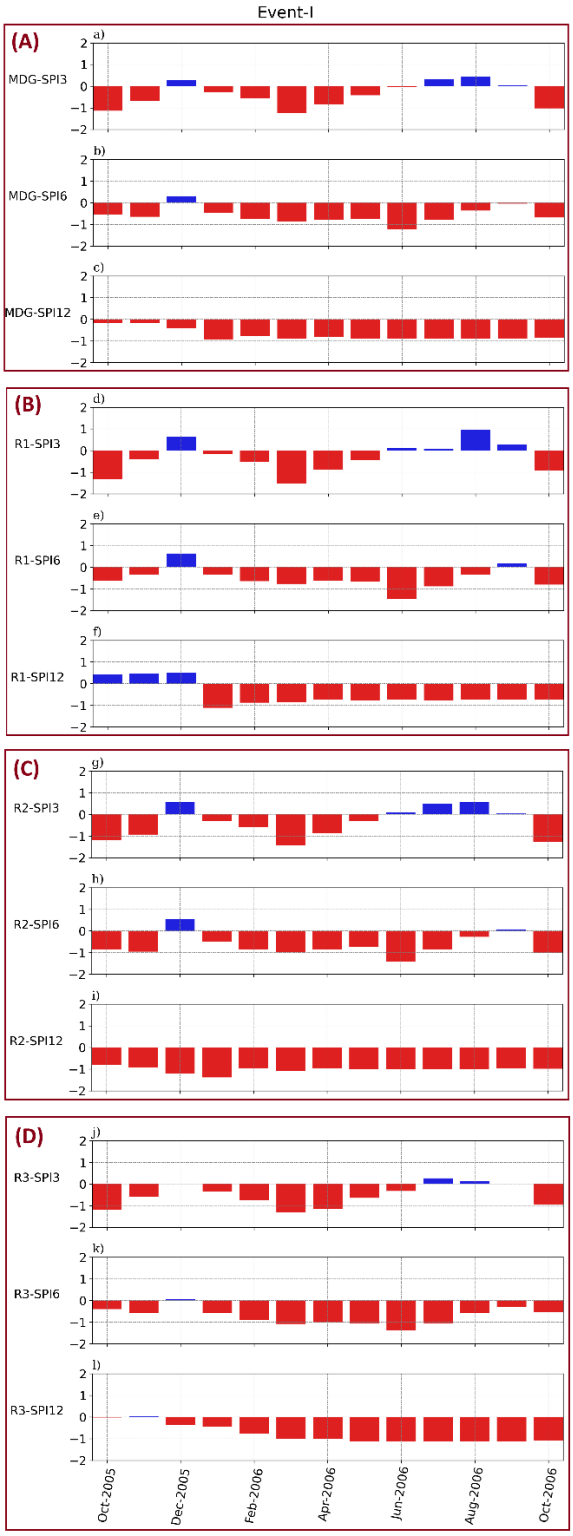

Figure S3: SPI values during the "Event-I". (A) represents the SPI-3, -6 and -12 averaged over the whole Madagascar. (B) represents the SPI-3, -6 and -12 averaged over the southern region (R1). (C) shows the SPI-3, -6 and -12 averaged over the western region (R2). (D) are the SPI-3, -6 and -12 averaged over the eastern region (R3).

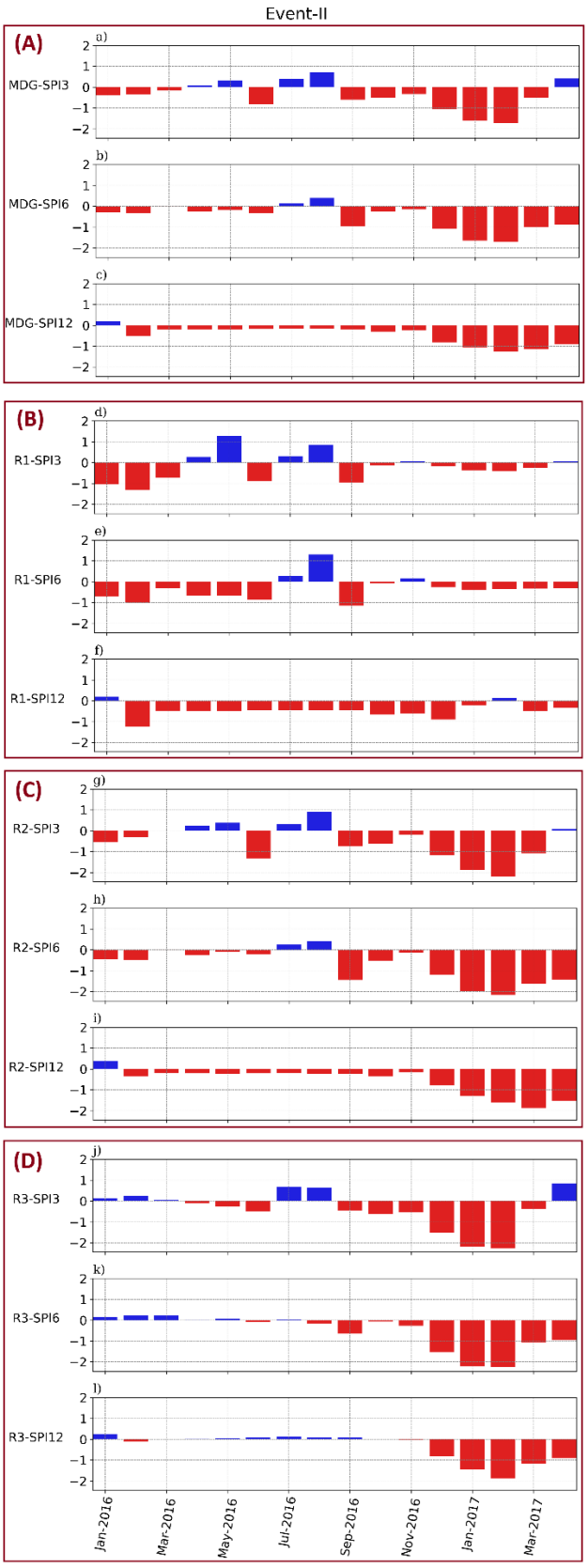

Figure S4: Same as Fig.S2, but for Event-II.

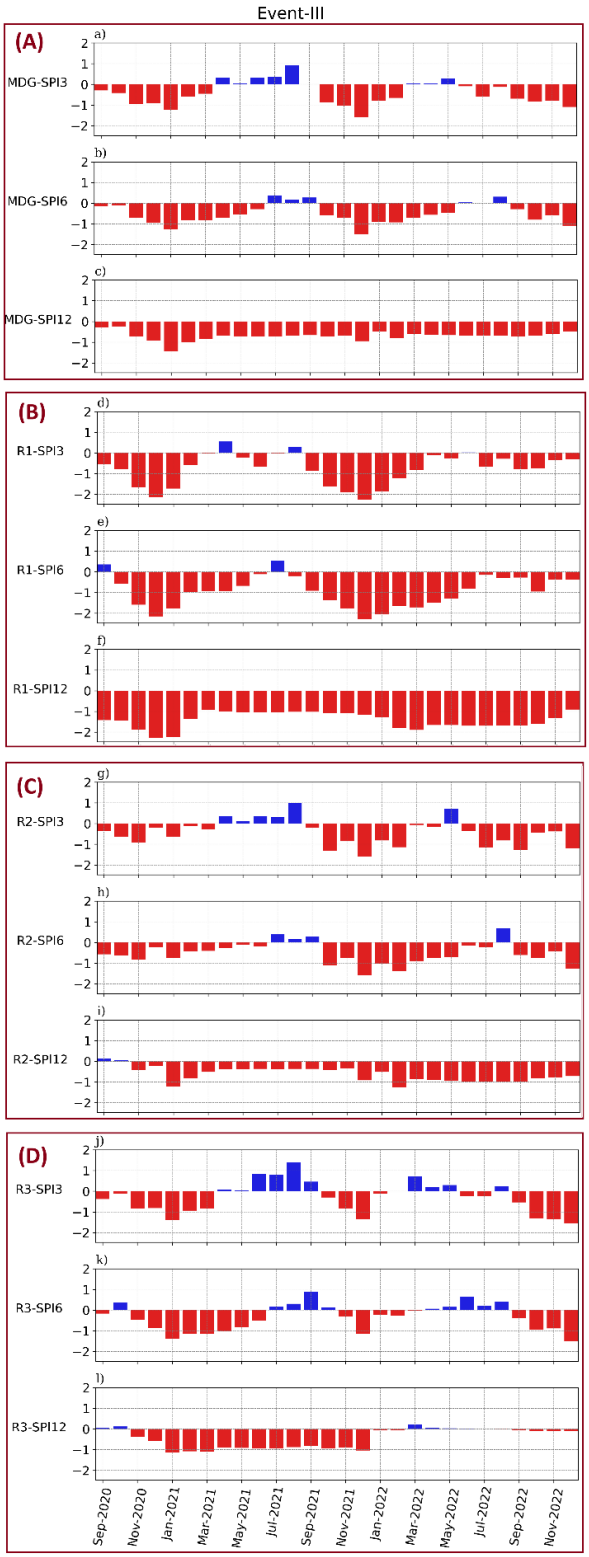

Figure S5: Same as Fig.S2, but for Event-III.

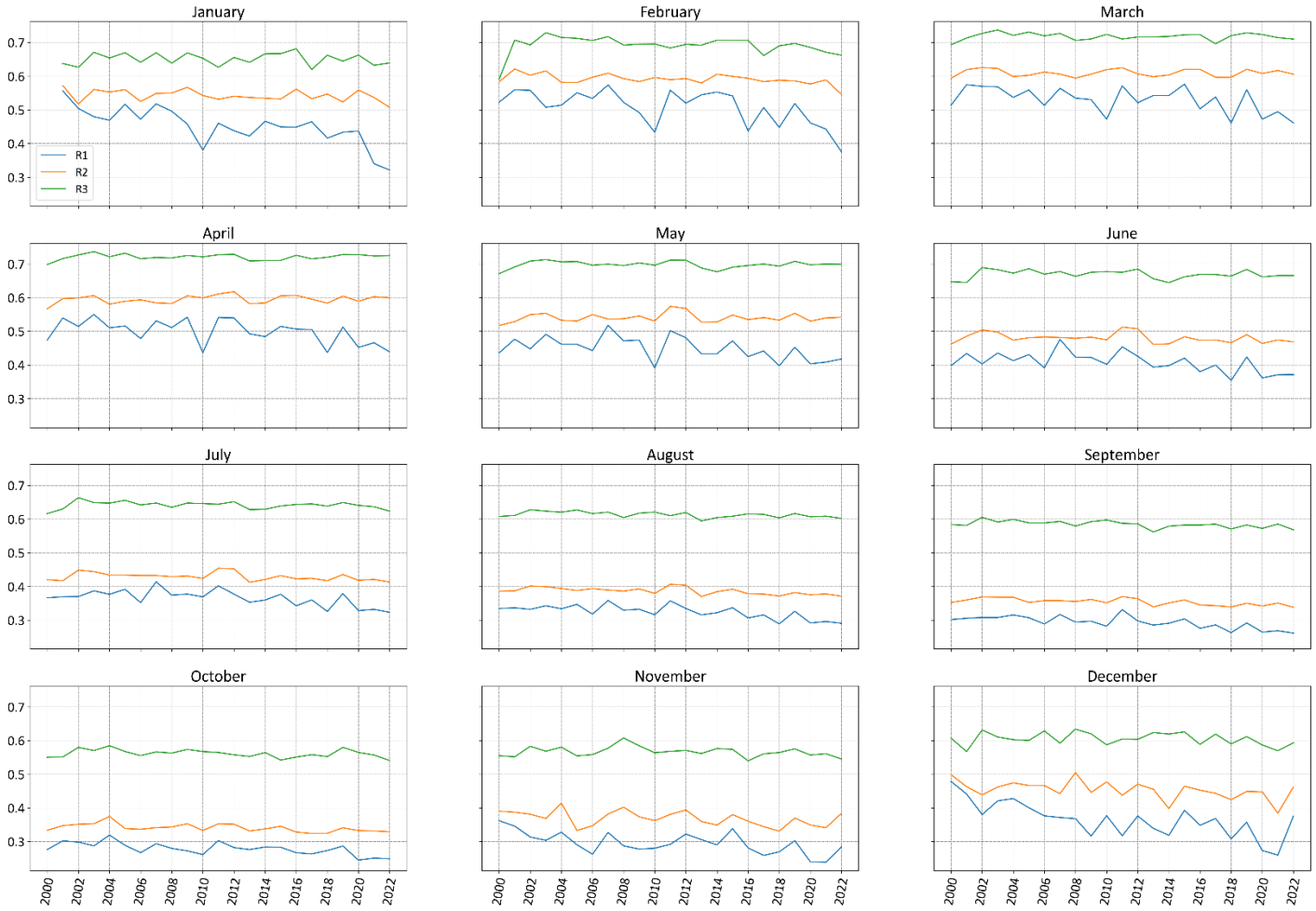

Figure S6: Temporal development of monthly NDVI values over the three studied regions of Madagascar. R1: South, R2: West and R3: East

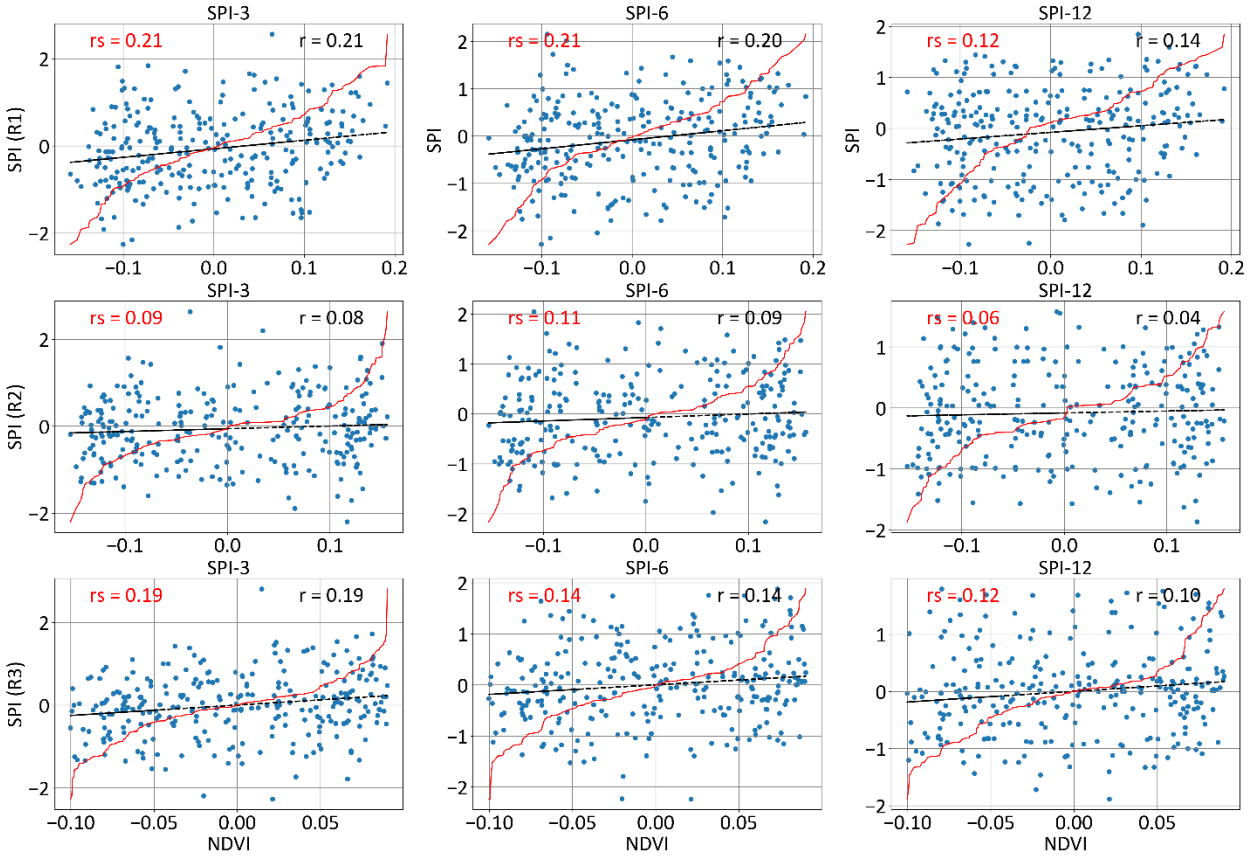

Figure S7: Scatterplots of detrended NDVI anomaly and SPI values for SPI3 (first column), SPI6 (second column) and SPI12 (third column) over R1 region (first row), R2 (second row) and R3 (third row). The values of Pearson (black) and Spearman (red) correlations between the NDVI and SPIs for each region are also shown. The black is the linear fit and the red line is the Spearman correlation line.