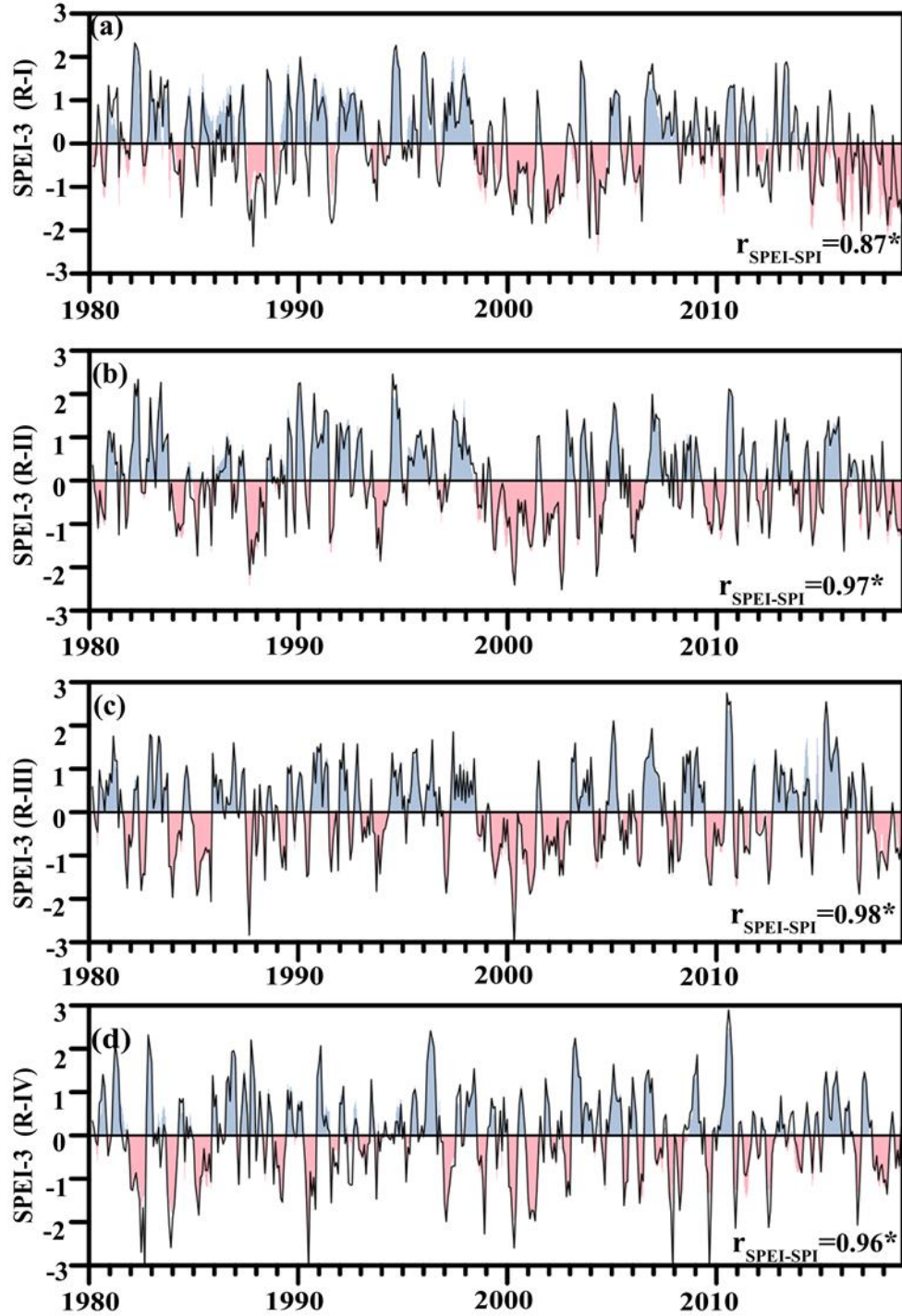
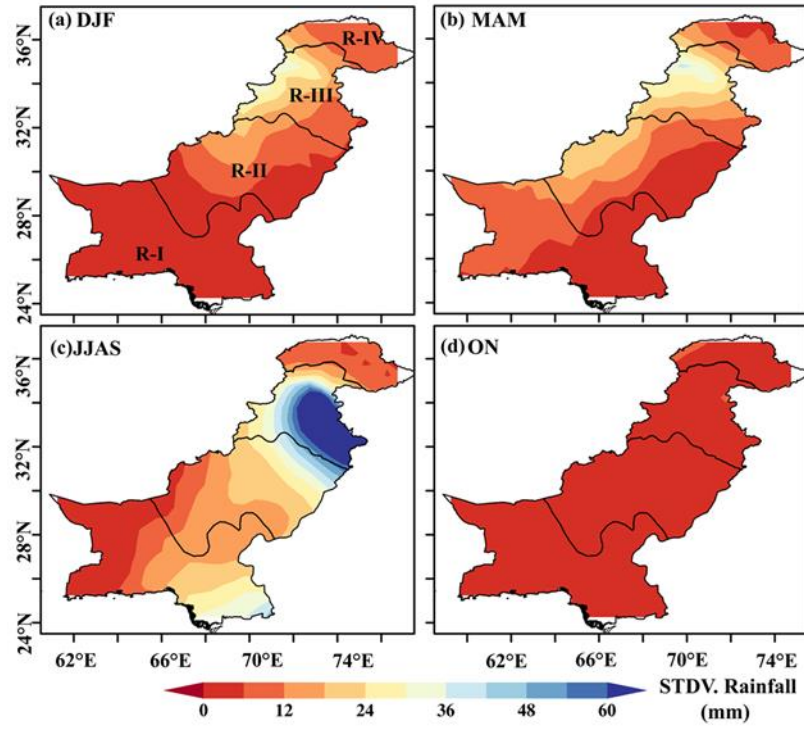


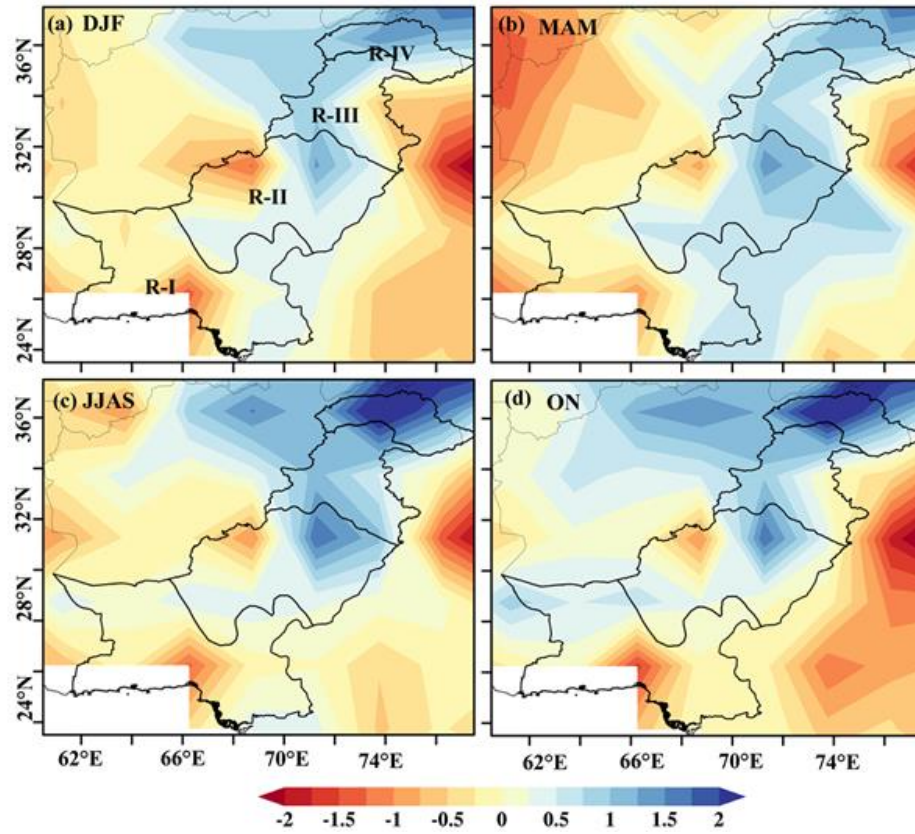
## Supplementary Materials



**Figure S1.** Time series of SPEI-3 and SPI-3 for (a) hyper-arid (b) arid (c) humid and (d) glacial regions in CPEC from 1980 to 2018. The positive and negative SPEI-3 values are shown by blue and pink colored shadings, respectively. The black line indicates an SPI-3 time series.



**Figure S2.** Standard deviation of seasonal rainfall during (a) DJF (December to February), (b) MAM (March to May), (c) JJAS (June to September), and (d) ON (October to November) seasons over the China Pakistan Economic Corridor for 1980–2018. R-I, R-II, R-III, and R-IV represent the hyper-arid, arid, humid, and glacial regions, respectively.



**Figure S3.** Spatial distribution of self-calibrating Palmer Drought Severity Index using Pen-man-Monteith (sc\_PDSI\_pm) during the (a) DJF (December to February; SPEI-3 at February), (b) MAM (March to May; SPEI-3 at May), (c) JJAS (June to September SPEI-4 at September), and (d) ON (October to November; SPEI-2 at November) Seasons over Pakistan for 1980–2018. R-I, R-II, R-III, and R-IV represent the hyper-arid, arid, humid, and glacial regions, respectively.