Electronic Supplementary Material to: Toward Understanding the Extreme Floods over Yangtze River Valley in June-July 2020: Role of Tropical Oceans*

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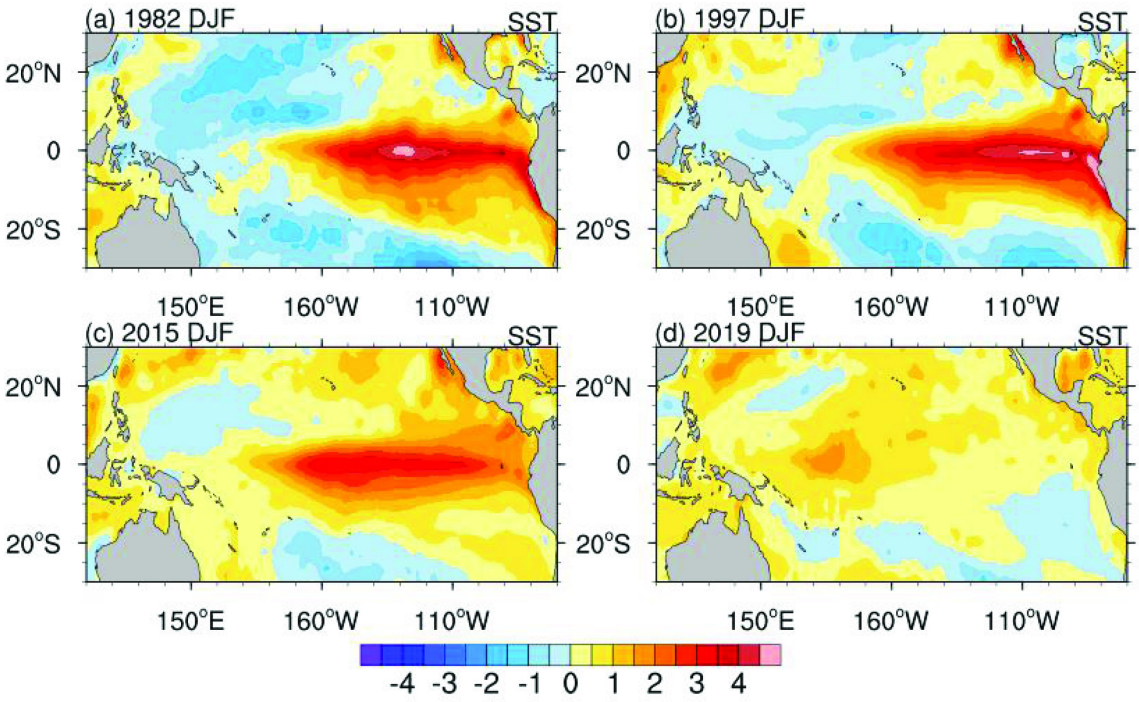

Fig. S1. Spatial distribution of Pacific SST anomalies (°C) averaged in the boreal winter season (December–February, DJF) of (a) 1982, (b) 1997, (c) 2015, and (d) 2019.

* The online version of this article can be found at https://doi.org/10.1007/s00376-021-1036-8.

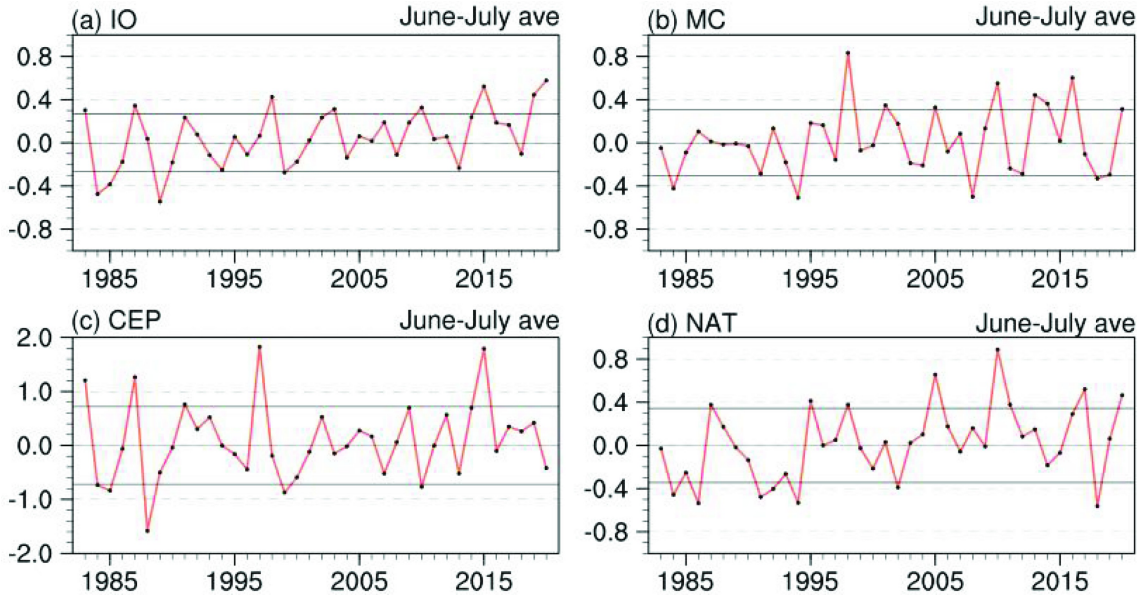

Fig. S2. Time series of June–July averaged SST anomalies (°C) averaged for the (a) Indian Ocean (IO), (b) Maritime Continent (MC), (c) central and eastern equatorial Pacific (CEP), and (d) North Atlantic Ocean (NAT). The horizontal black line in each subplot denotes one standard deviation of each SST anomaly time series.

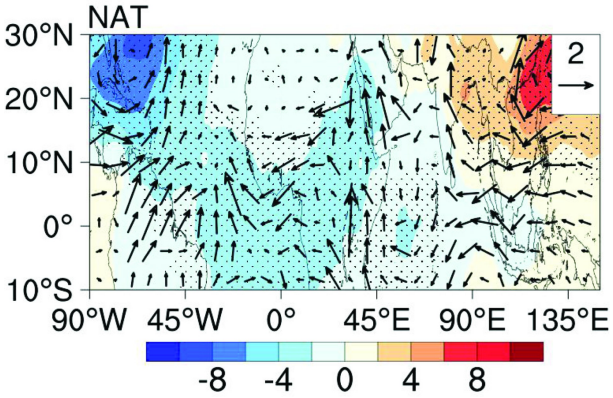

Fig. S3. Impacts of the warm SST anomalies in the North Atlantic Ocean (NAT) on the 850 hPa geopotential height (shading, gpm) and horizontal wind (vector, m s^{-1}) during June–July 2020 based on the sensitivity model experiment (i.e., EXP_NATOBS minus EXP_NATCLM). Stippling indicates that the geopotential height anomalies are statistically significant at the 90% confidence level based on two-sided Student′s *t*-test.

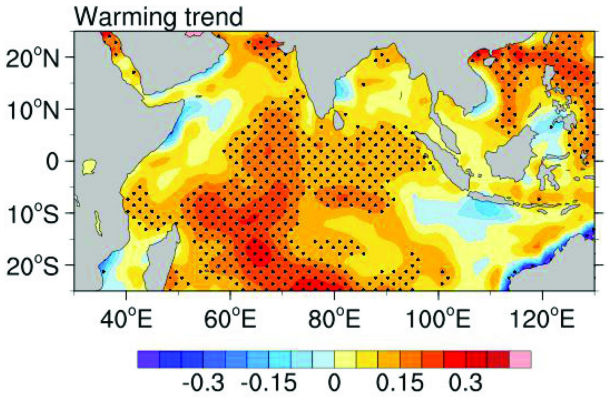

Fig. S4. Spatial distribution of the multi-decadal warming trends [°C (10 yr) $^{-1}$] in the Indian Ocean SST anomalies during 1983–2020. Stippling denotes that the multi-decadal warming trend is statistically significant at the 95% confidence level according to two-sided Student-*t* test.

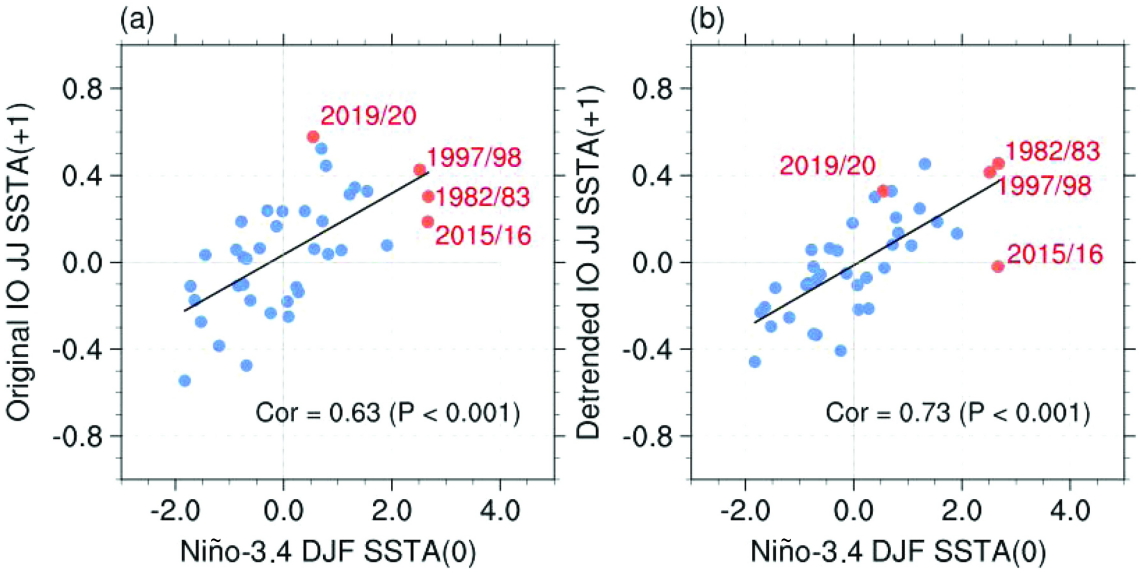

Fig. S5. Scatter plot of the Niño-3.4 SST anomalies in December-February (DJF, averaged over 5°N–5°S, 190°–240°E) and (a) the original (non-detrended) and (b) detrended IO SST anomalies in following June–July (JJ, averaged over 20°N–20°S, 50°–100°E). Cor indicates correlation coefficient between two series.

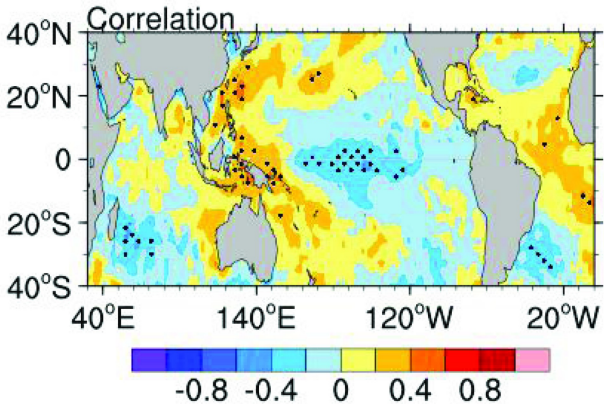

Fig. S6. Correlation between the June–July precipitation anomalies over the MLYRV and the SST anomalies during 1983–2020 after linearly removing the influence of the IO SST anomalies on the MLYRV precipitation and the tropical SST anomalies. Stippling denotes that the correlation is statistically significant at the 95% confidence level according to two-sided Student-*t* test.