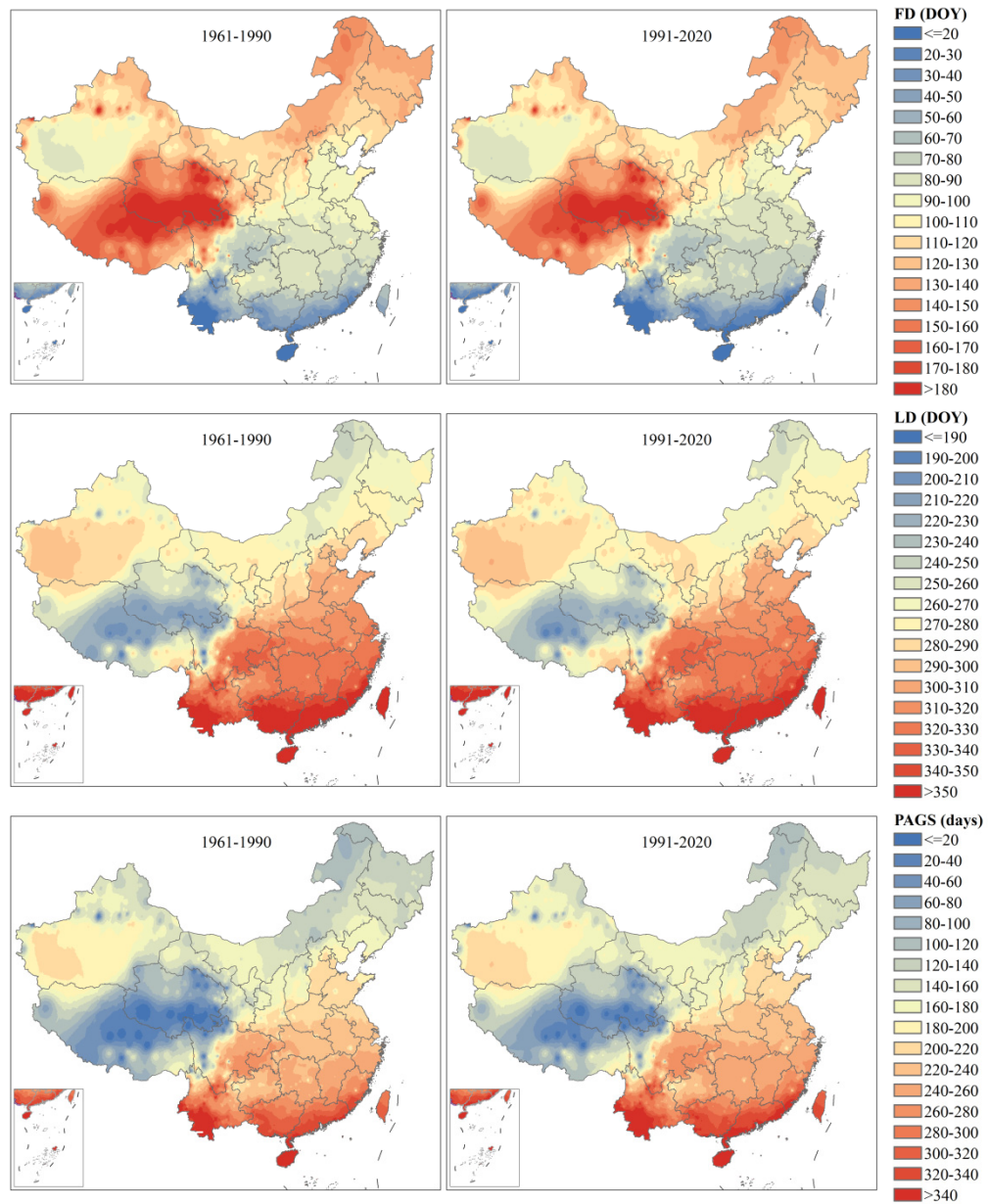
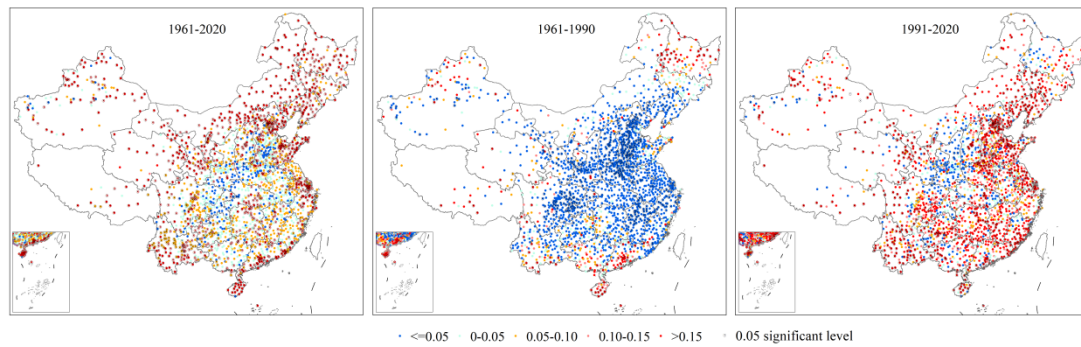


# Supplementary



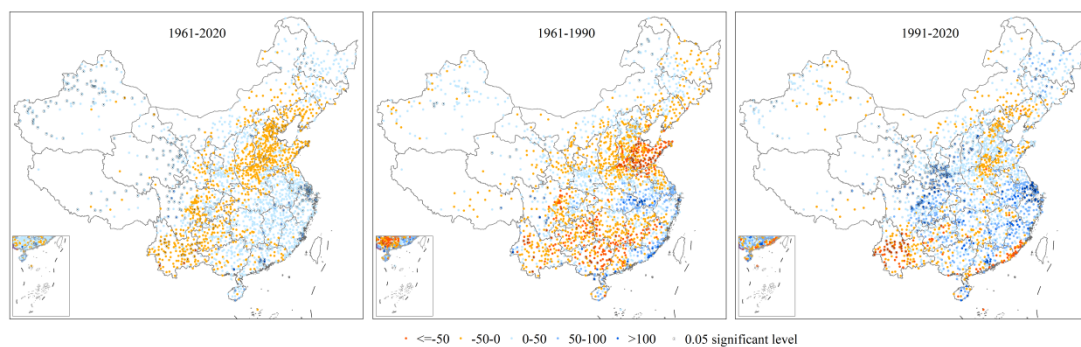
**Figure S1.** The first date with daily mean air temperature  $\geq 10^{\circ}\text{C}$ , the last date with daily mean air temperature  $\leq 10^{\circ}\text{C}$  and potential agricultural growing season in 1961–1990 and 1991–2020.



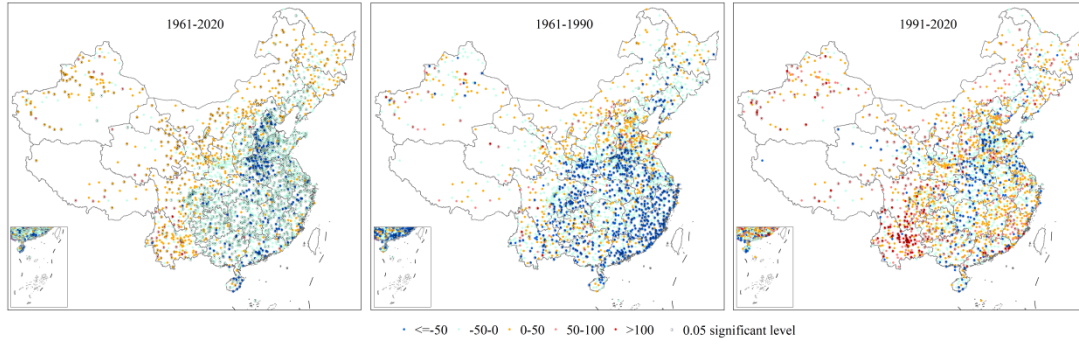
**Figure S2.** The trend of mean air temperature during potential agricultural growing season in different periods (the dot with circle represents the 0.05 significant level).

**Table S1.** The number of stations characterized by increasing and decreasing trend (The number in bracket represents the trend at the 0.05 significant level).

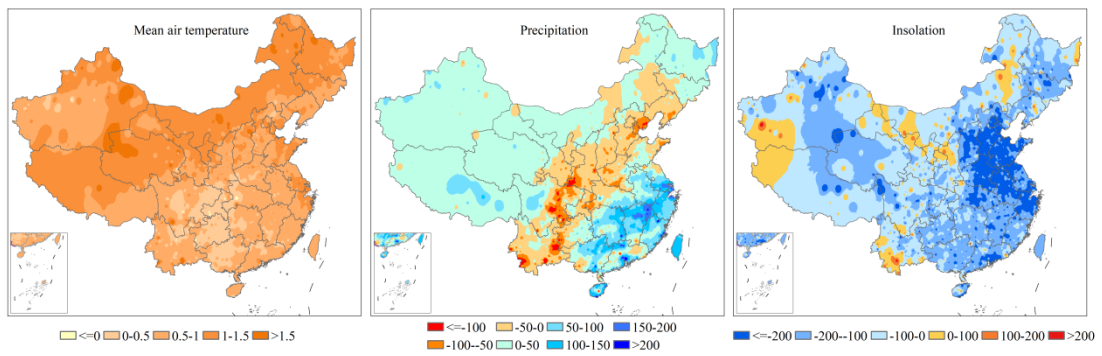
Element	Period	Increasing trend	Decreasing trend
Mean air temperature	1961-2020	1849(1045)	208(17)
	1961-1990	558(80)	1497(345)
	1991-2020	1738(506)	319(16)
Precipitation	1961-2020	1219(206)	838(44)
	1961-1990	917(35)	1140(48)
	1991-2020	1521(193)	536(30)
Insolation	1961-2020	608(219)	1449(869)
	1961-1990	544(68)	1513(565)
	1991-2020	1143(258)	914(171)



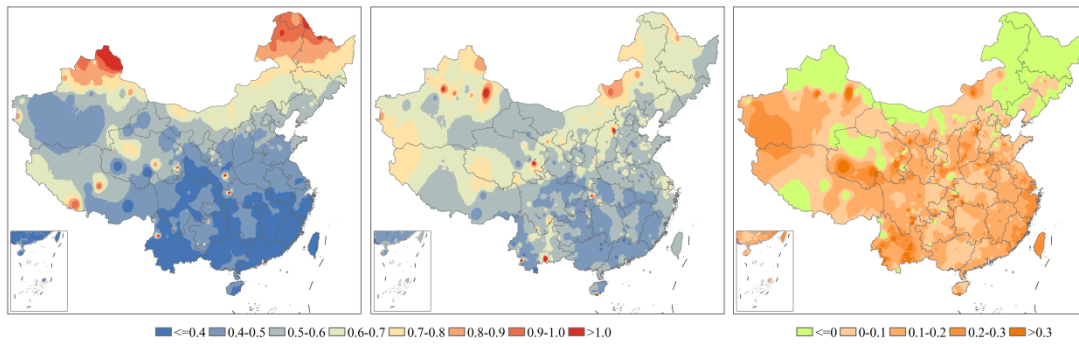
**Figure S3.** The trend of precipitation during potential agricultural growing season in different periods (the dot with circle represents the 0.05 significant level).



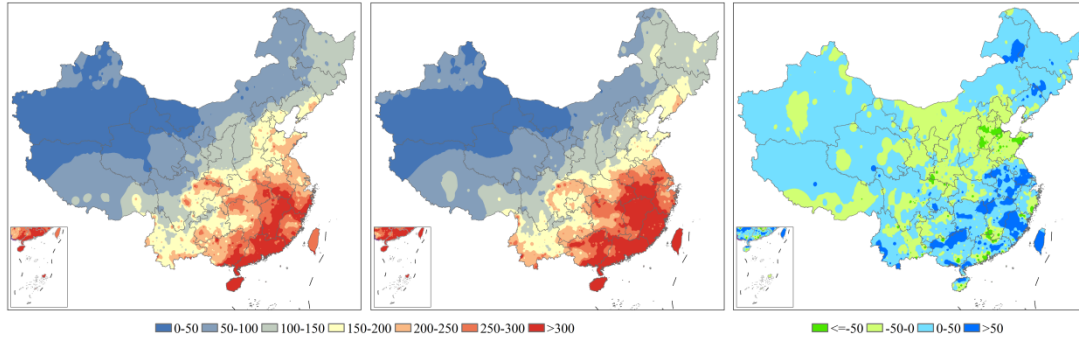
**Figure S4.** The trend of insolation during potential agricultural growing season in different periods (the dot with circle represents the 0.05 significant level).



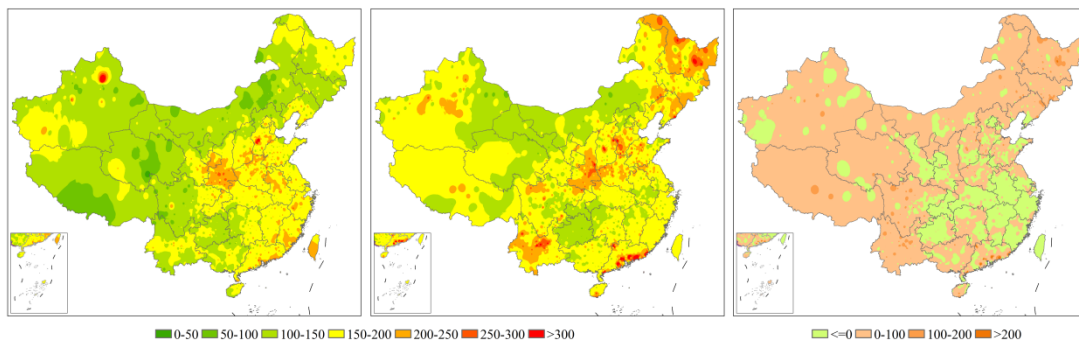
**Figure S5.** The difference in mean air temperature, precipitation and insolation during the whole year in 1991-2020 relative to 1961-1990.



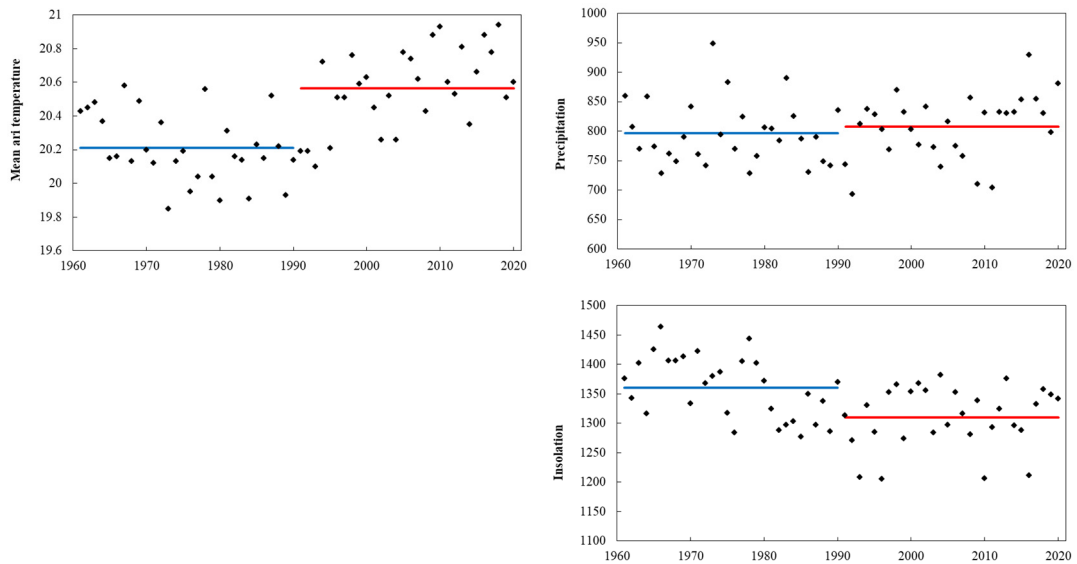
**Figure S6.** The variation in mean air temperature during the whole year in different periods (From left to right represents 1961-1990, 1991-2020 and (1991-2020)-(1961-1990), respectively).



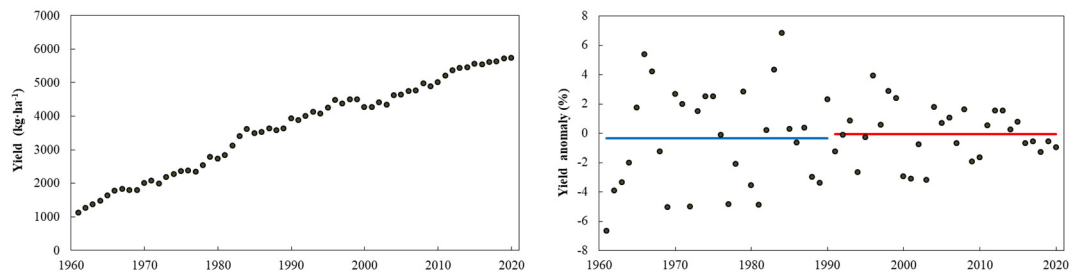
**Figure S7.** The variation in precipitation during the whole year in different periods (From left to right represents 1961–1990, 1991–2020 and (1991–2020)–(1961–1990), respectively).



**Figure S8.** The variation in insolation during the whole year in different periods (From left to right represents 1961–1990, 1991–2020 and (1991–2020)–(1961–1990), respectively).



**Figure S9.** The change in national mean air temperature, precipitation and insolation during potential agricultural growing season in 1961–2020 (Blue and red line represent the mean value of 1961–1990 and 1991–2020, respectively).



**Figure S10.** The change in national crop yield and yield anomaly in 1961–2020 (Blue and red line represent the mean value of 1961–1990 and 1991–2020, respectively).