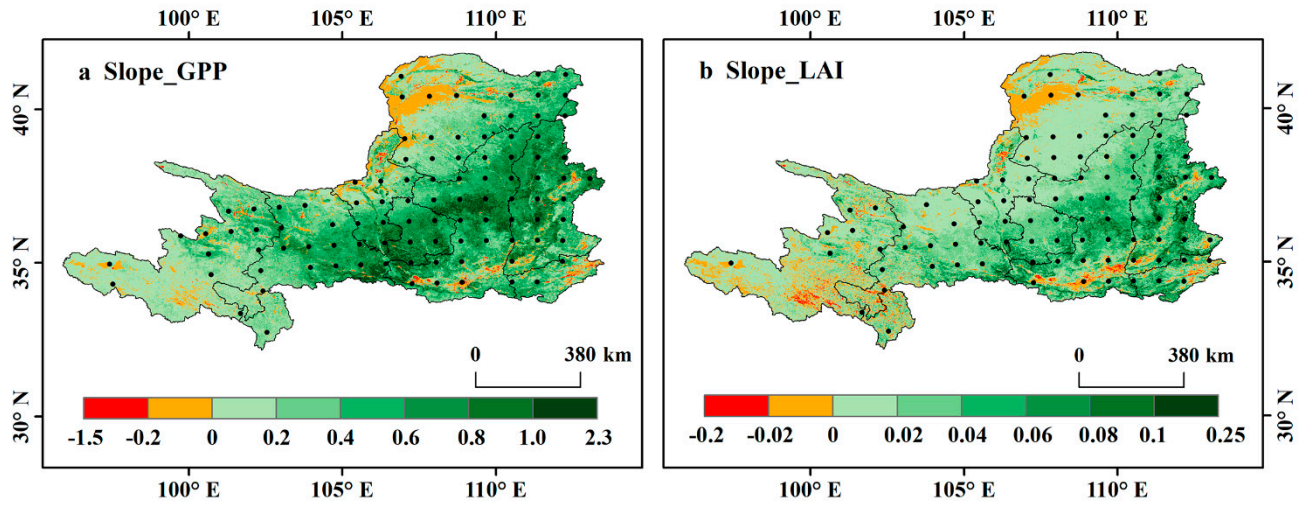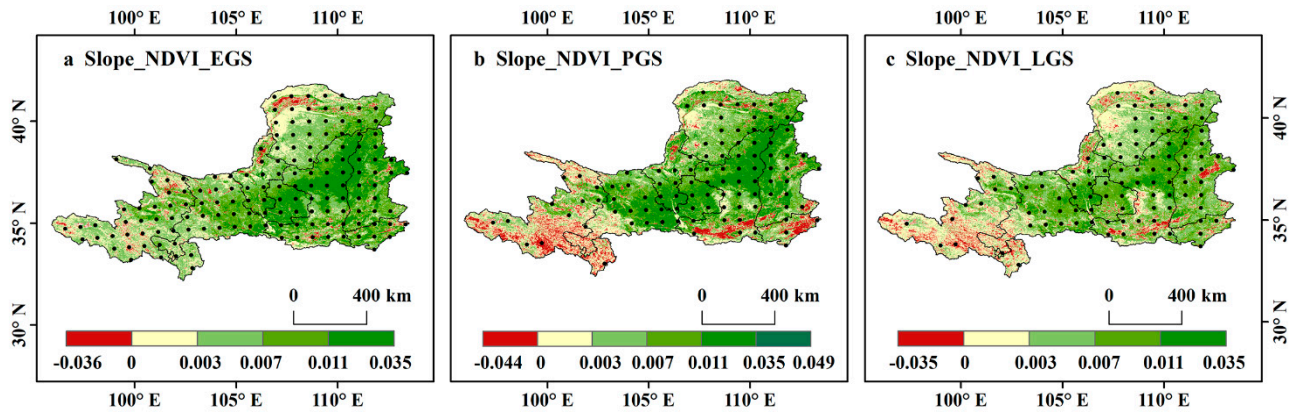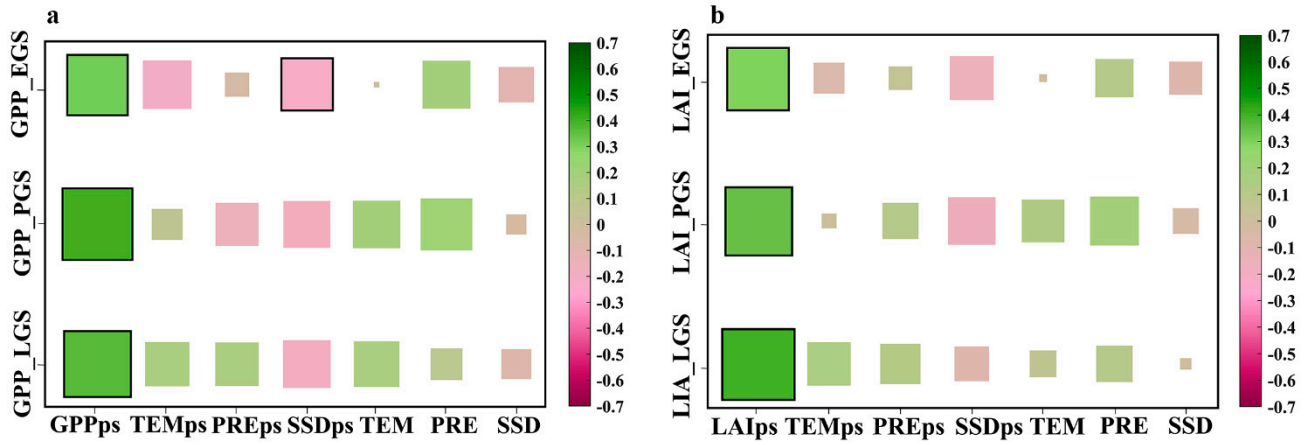**Figure S1.** Spatial distribution (a-c) and inter-annual variation rates (slope) (d-f) of mean precipitation (PRE), mean temperature (TEM), and mean sunshine duration (SSD) in growing season in the upper and middle reaches of the YRB over a 20-year period (2000-2019).
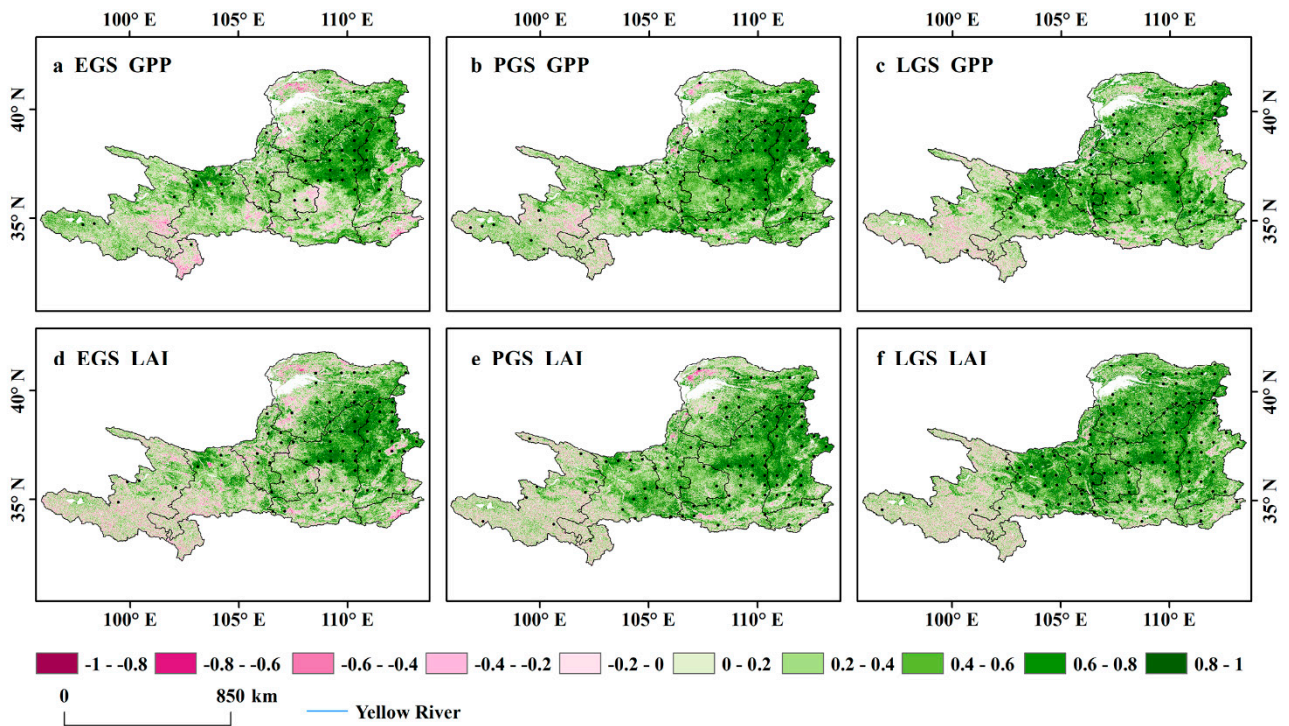
Figure S2. The inter-annual variation rates (slope) of GPP (a) and LAI (b) in the growing season in the middle and upper of the YRB over a 20-year period (2000-2019). Black dots indicate statistically significant correlations at the 95% confidence level. Same below.
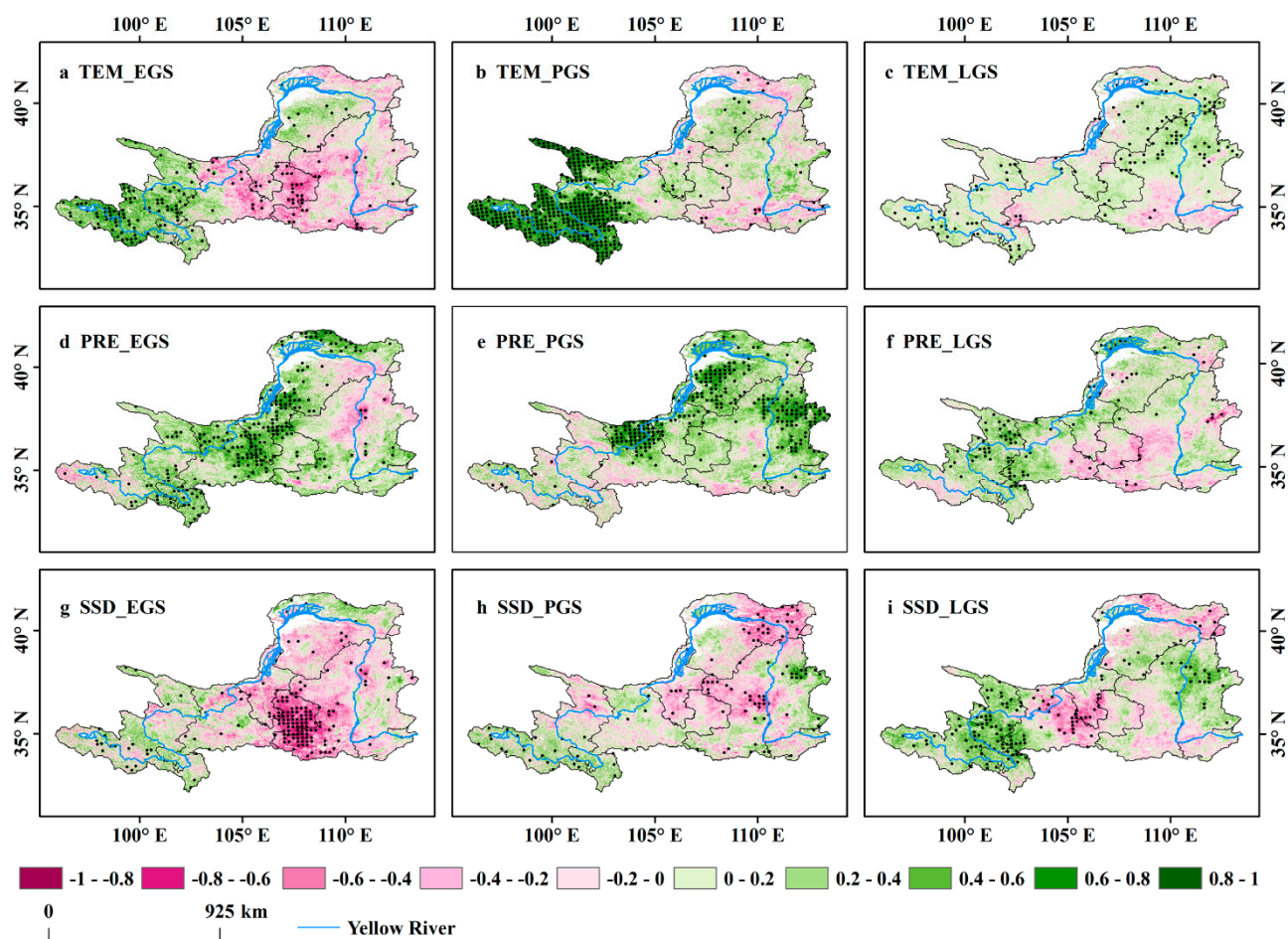
Figure S3. The inter-annual variation rates (slope) of NDVI in three active seasons in the upper and middle reaches of the YRB over a 20-year period (2000-2019). The slopes patterns are shown for EGS (a), PGS (b) and LGS (c).

Figure S4. Partial correlations between vegetation growth and that of its driving factors. This is same as Figure 3, except that vegetation growth is here based on GPP (a) and LAI (b).
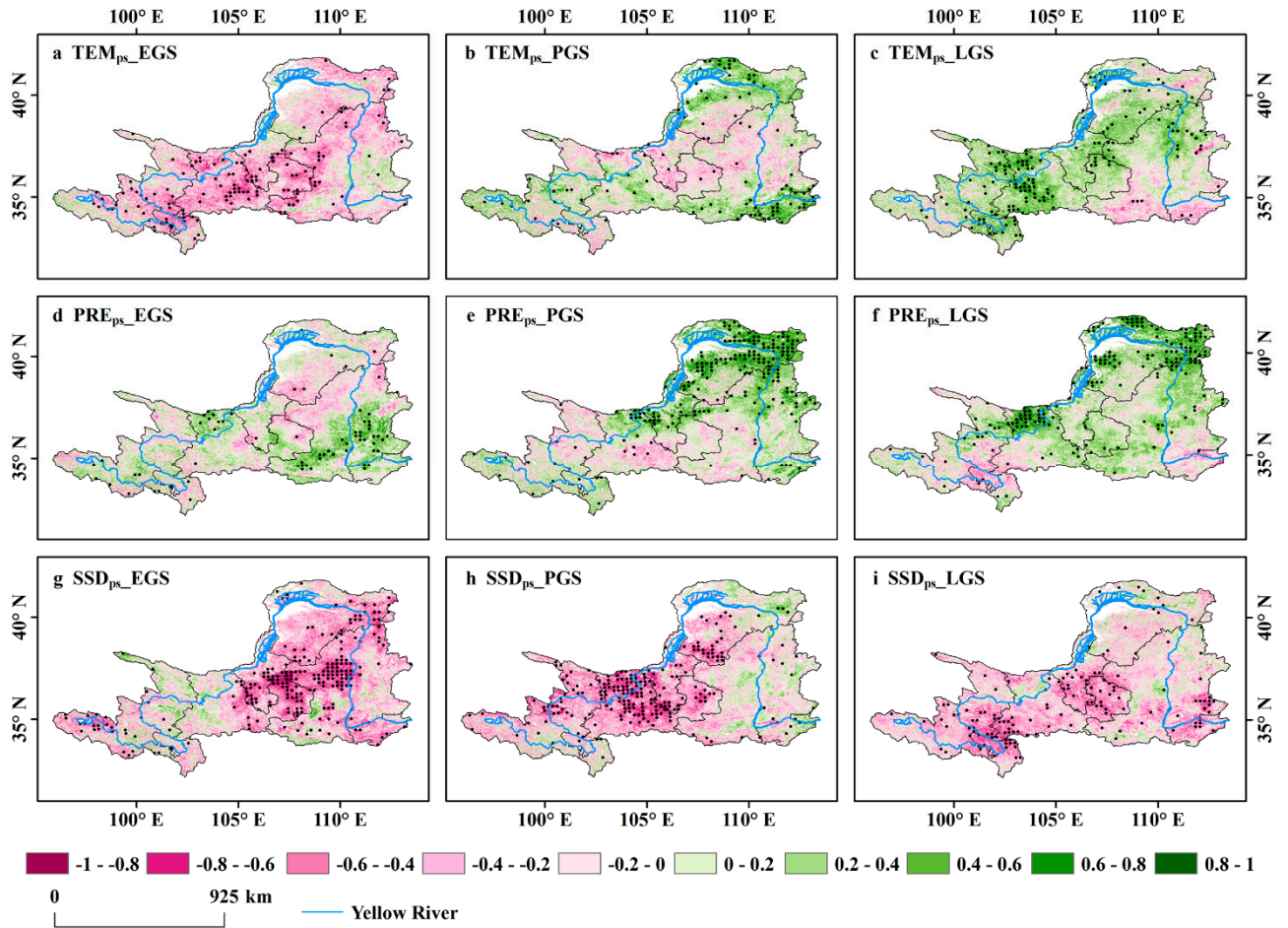

Figure S5. Spatial distribution of the partial correlations between GPP (a-c) or LAI (d-f) of each season and that of the preceding season. Correlation patterns are shown for EGS (a, d), PGS (b, e), and LGS (c, f).
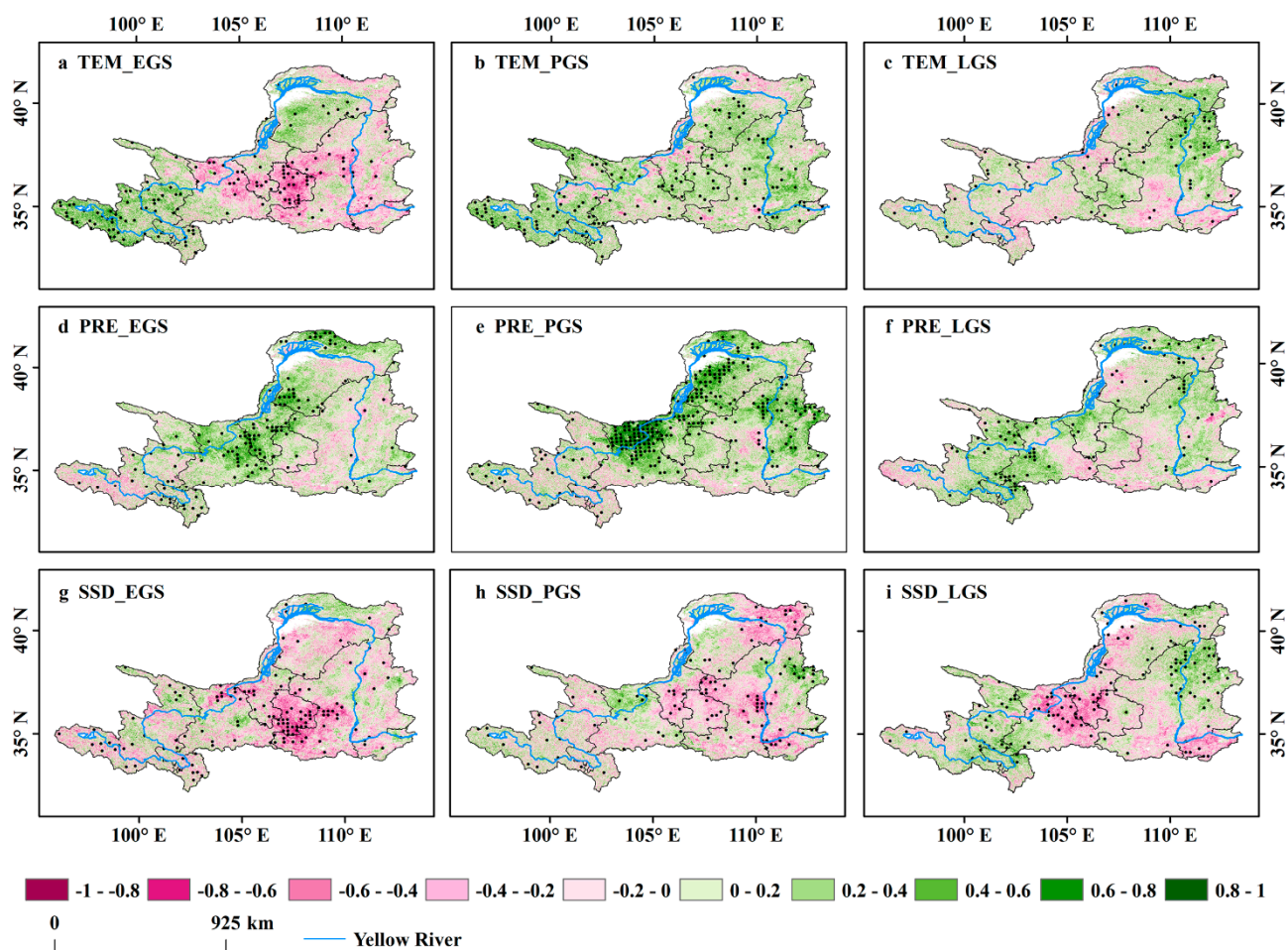
Figure S6. Spatial distribution of the partial correlations between GPP of each season and the concurrent climate factors. Correlation patterns are shown for EGS (a, d, g), PGS (b, e, h) and LGS (c, f, i), and for correlation with concurrent temperature (TEM) (a-c), precipitation (PRE) (d-f) and sunshine duration (SSD) (g-i).
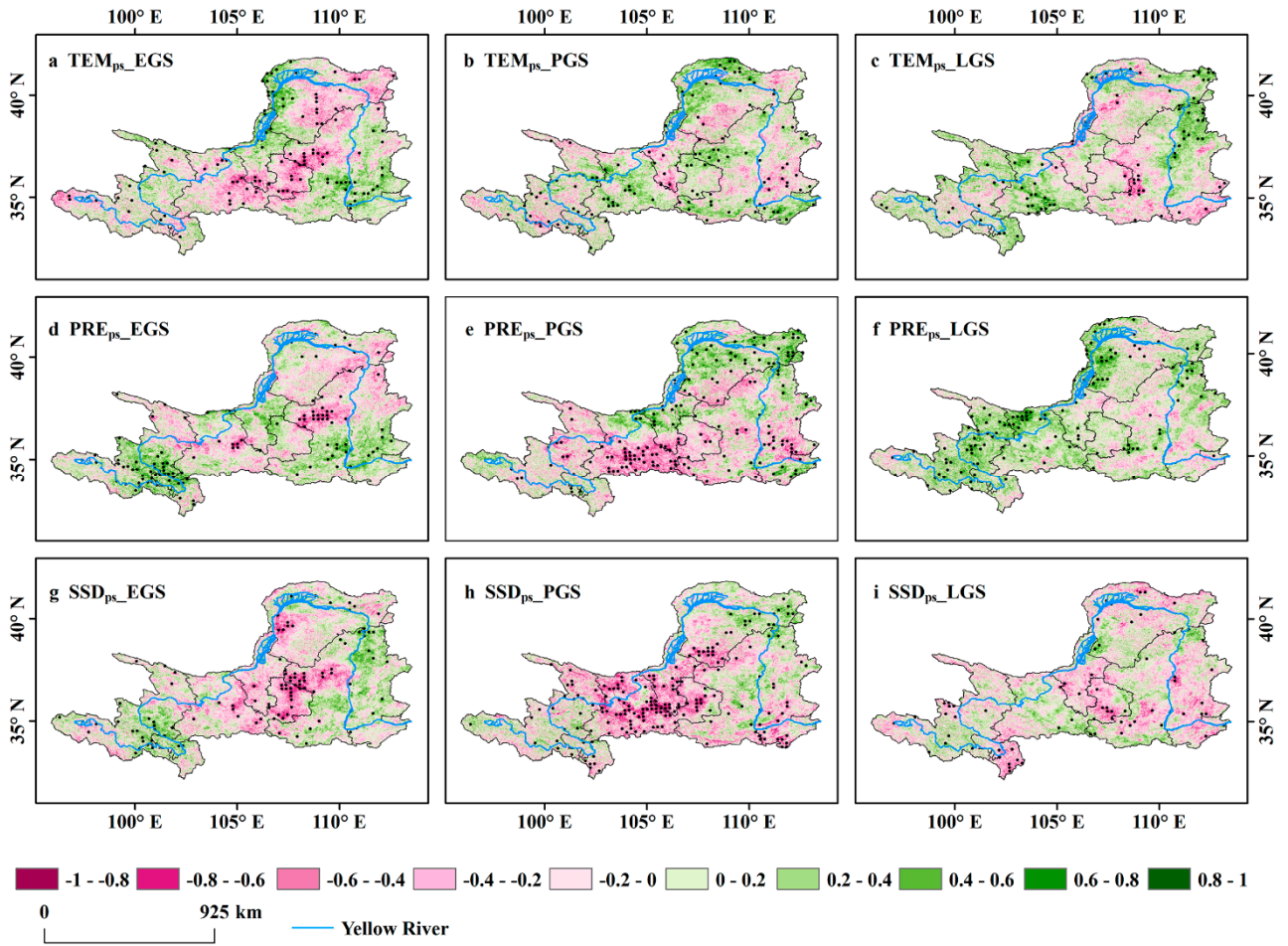
Figure S7. Spatial distribution of the partial correlations between GPP of each season and climate factors of the preceding season. Correlation patterns are shown for EGS (a, d, g), PGS (b, e, h) and LGS (c, f, i), and for correlation with preceding season temperature (TEM) (a-c), precipitation (PRE) (d-f), and sunshine duration (SSD) (g-i).

Figure S8. Spatial distribution of the partial correlations between LAI of each season and the concurrent climate factors. Correlation patterns are shown for EGS (a, d, g), PGS (b, e, h) and LGS (c, f, i), and for correlation with concurrent temperature (TEM) (a-c), precipitation (PRE) (d-f), and sunshine duration (SSD) (g-i).

Figure S9. Spatial distribution of the partial correlations between LAI of each season and climate factors of the preceding season. Correlation patterns are shown for EGS (a, d, g), PGS (b, e, h), and LGS (c, f, i), and for correlation with preceding season temperature (TEM) (a-c), precipitation (PRE) (d-f) and sunshine duration (SSD) (g-i).