

**A Socio–Hydro–Climatological Framework Reveals Archetypes of Water Supply–
Demand Imbalance**
-- SUPPLEMENTARY INFORMATION --

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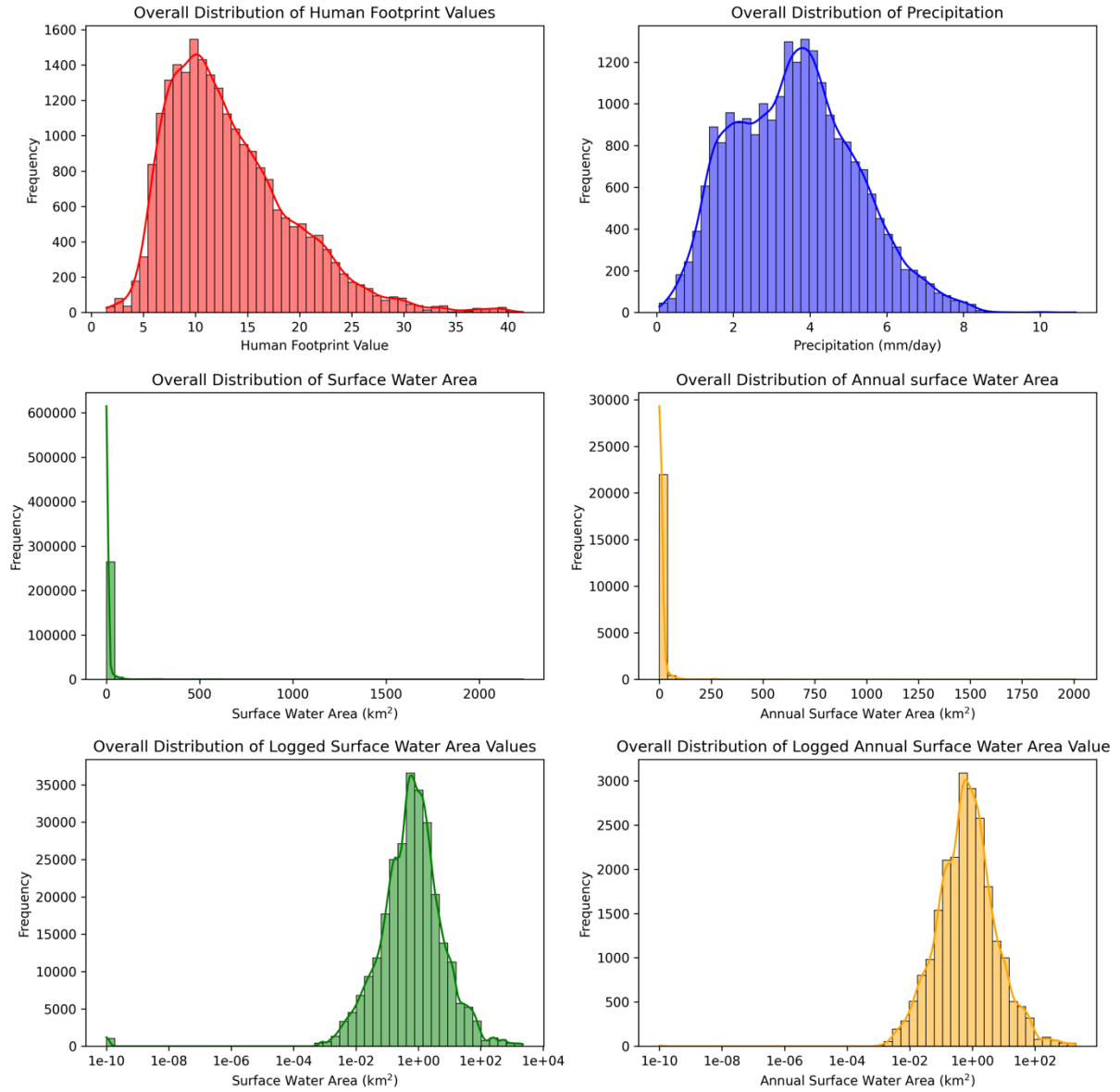


Figure S1. Overall distribution of human footprint, precipitation, surface water area, annual surface water area, log-transformed surface water area, and log-transformed annual surface water area (using all data points).

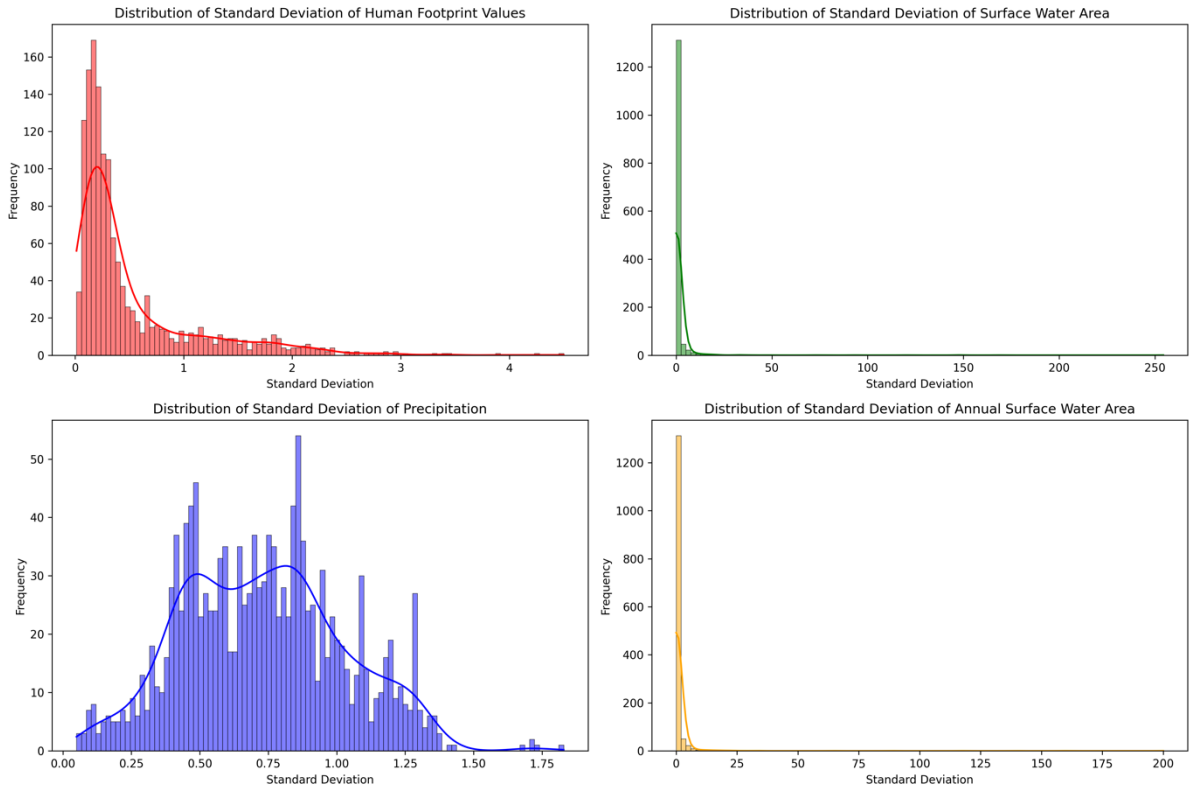


Figure S2. Distribution of standard deviation of human footprint, precipitation, surface water area, and annual surface water area (using all data points).

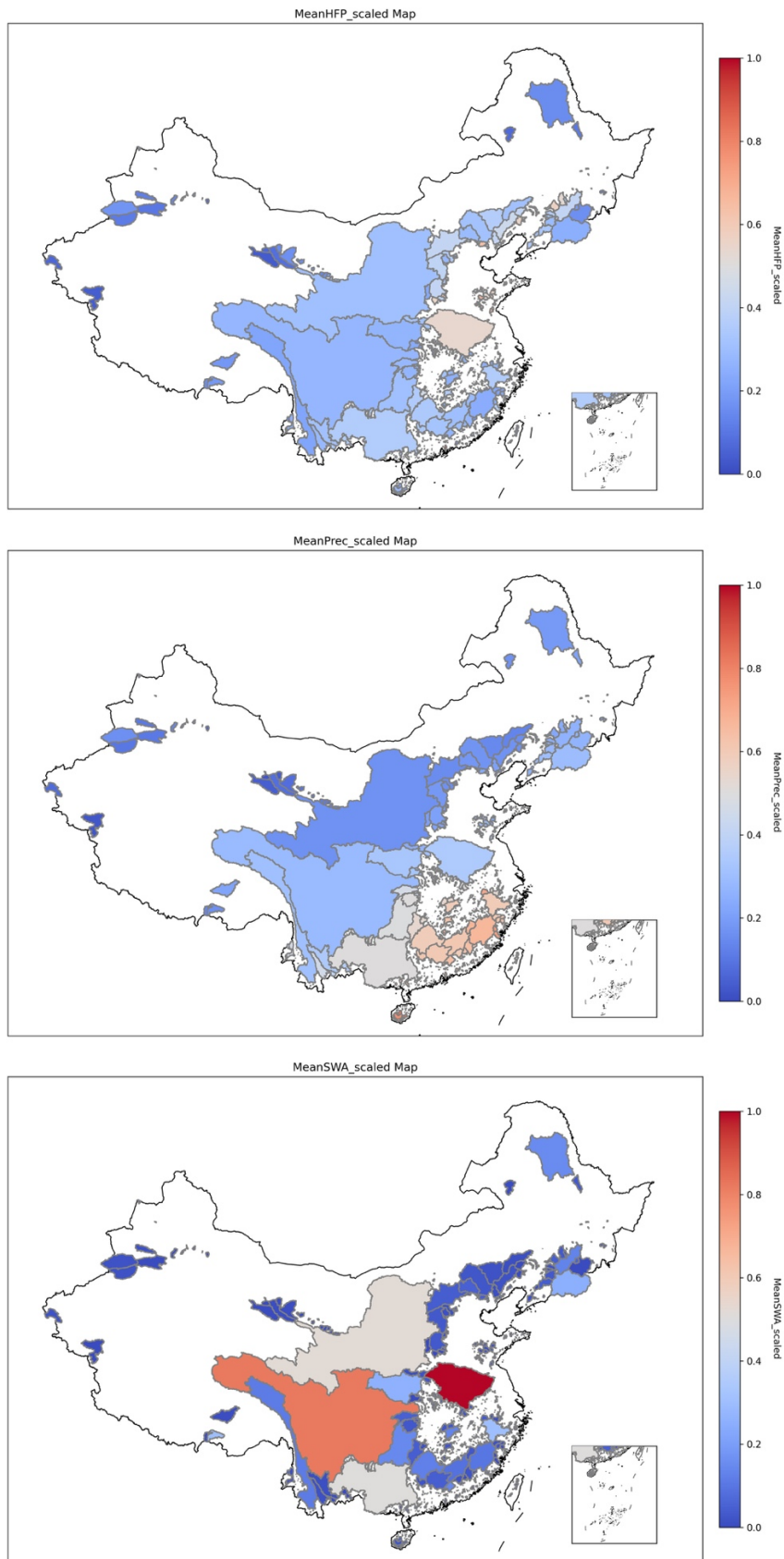


Figure S3. Distribution map of standard deviation of human footprint, precipitation, surface water area, and annual surface water area. Each polygon is a basin.

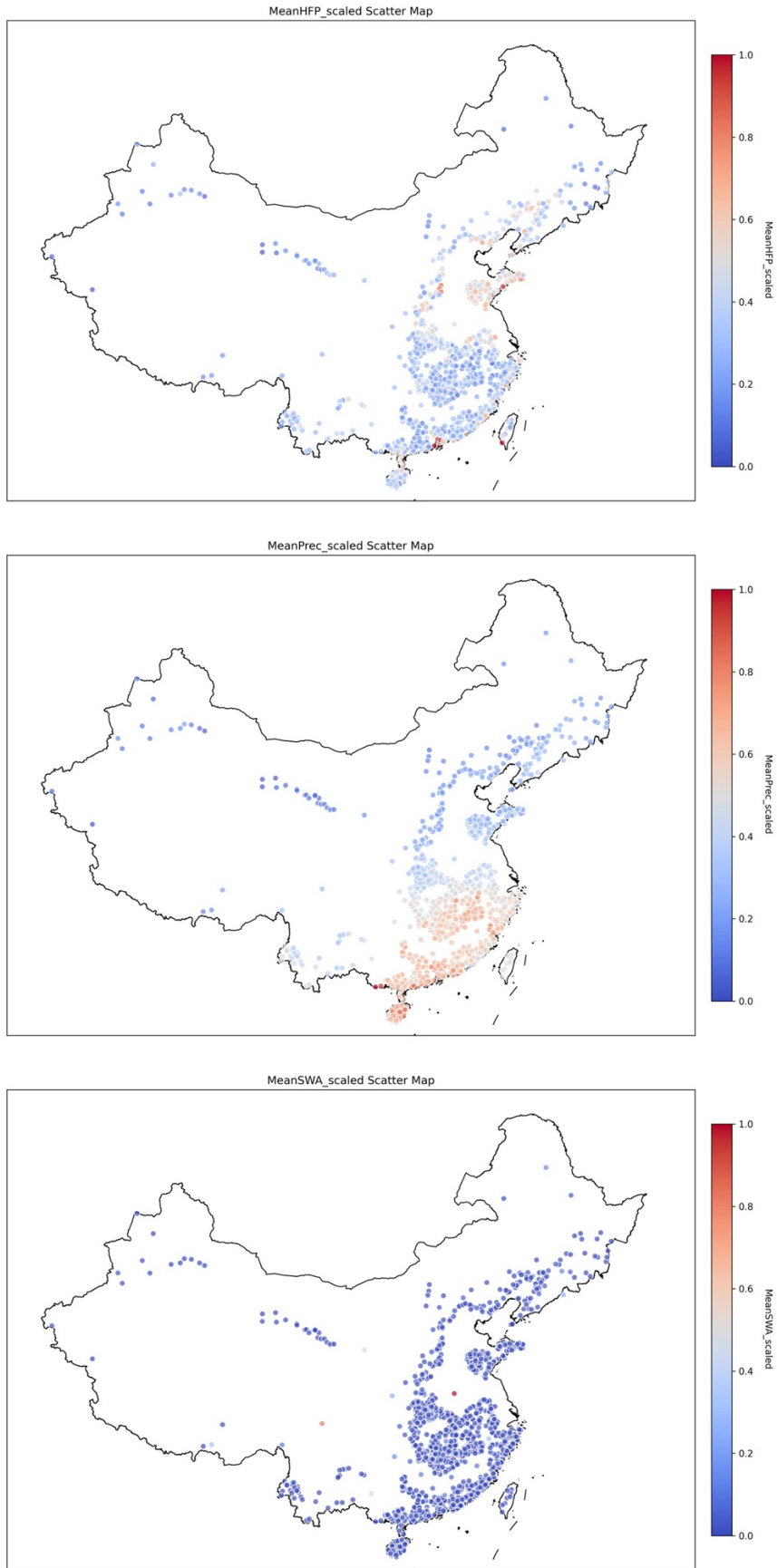


Figure S4. Distribution scatter map of standard deviation of human footprint, precipitation, surface water area, and annual surface water area.

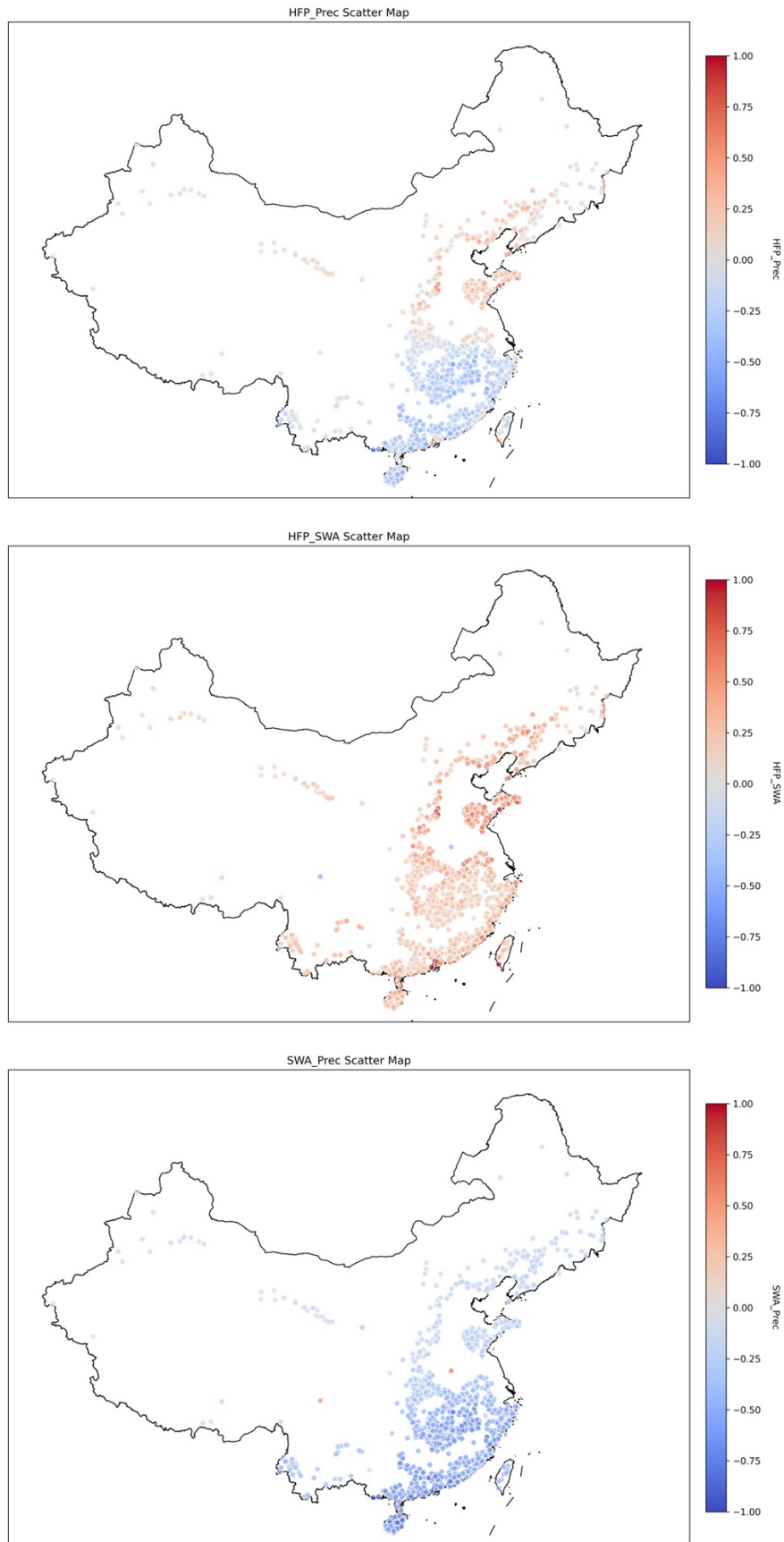


Figure S5 Distribution of standard deviation of human footprint, precipitation, surface water area, and annual surface water area.

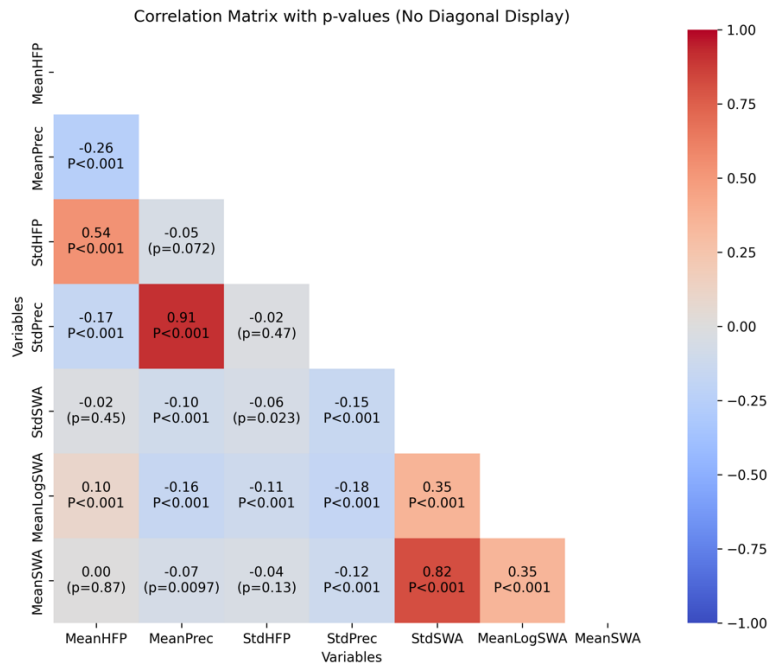
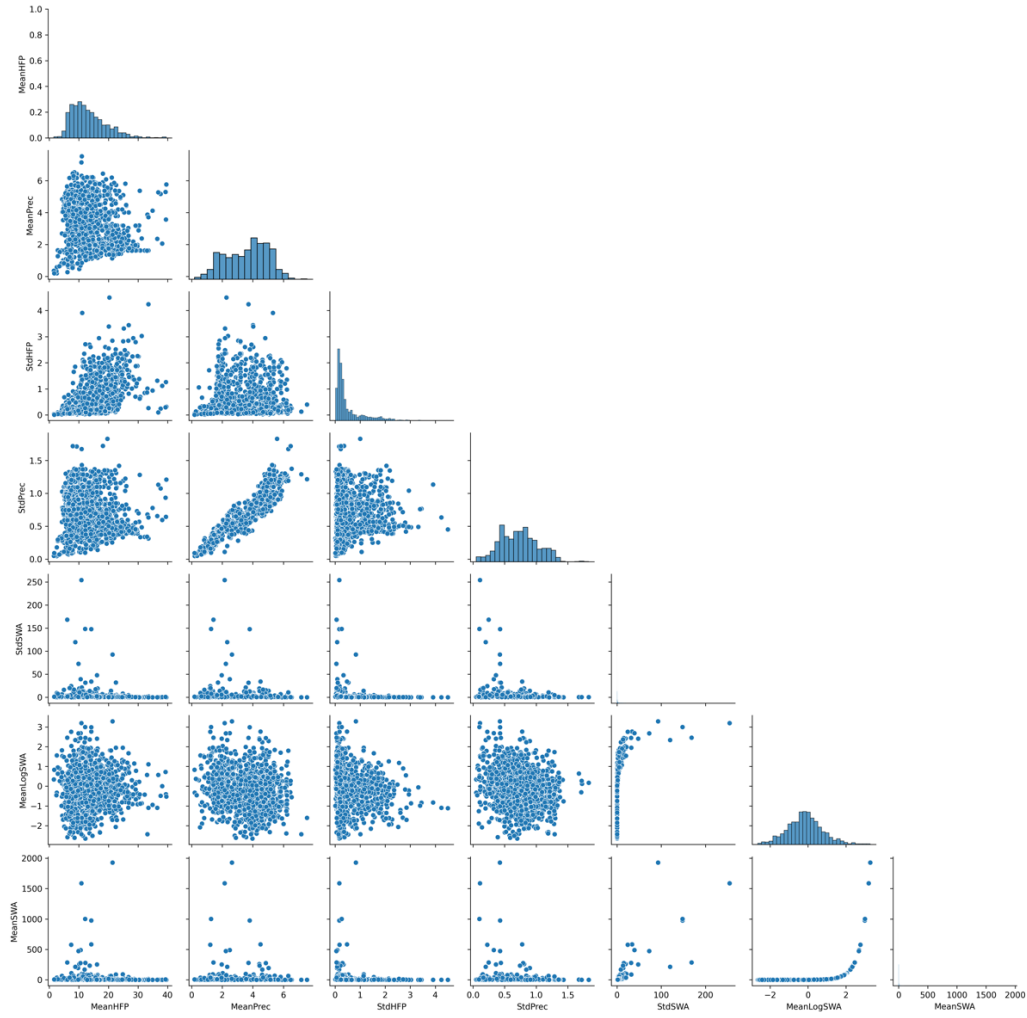


Figure S6. Correlation matrix between the mean and standard deviation of human footprint, precipitation, and surface water area.

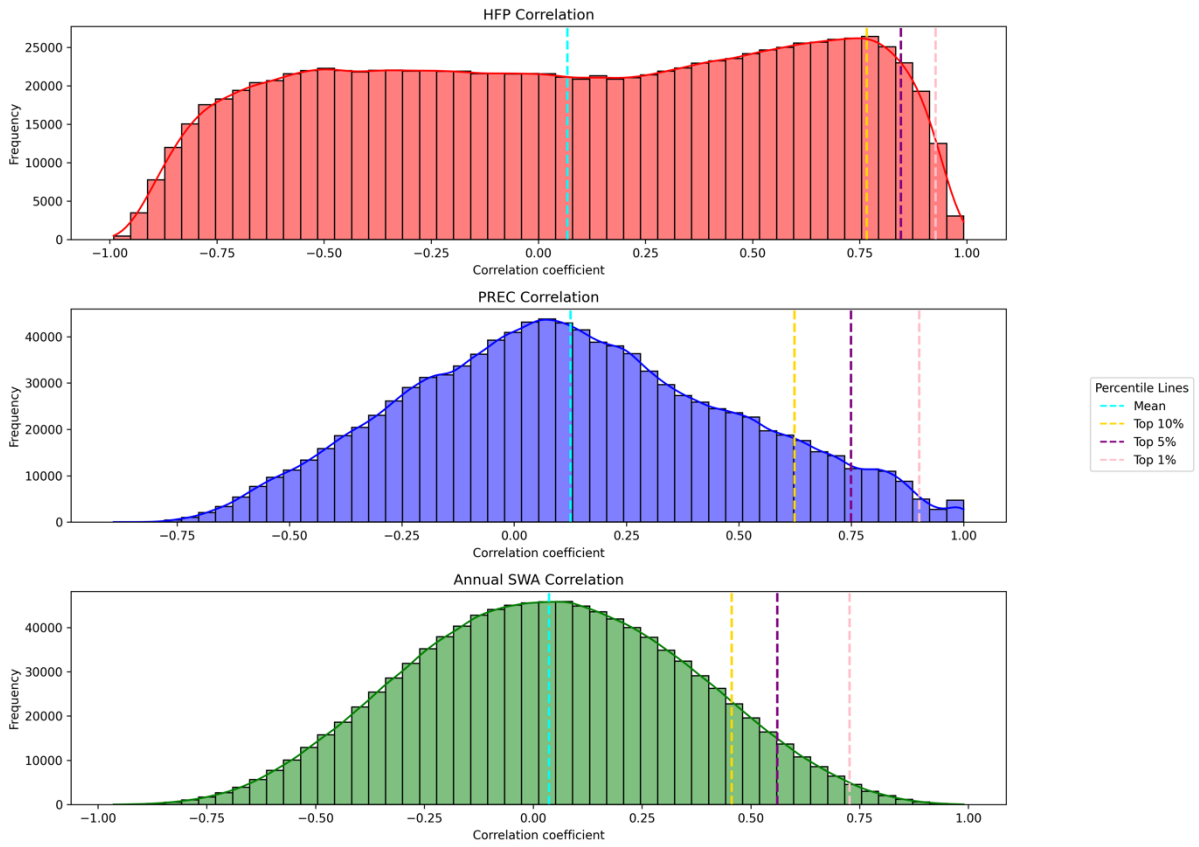


Figure S7. Distribution of correlation coefficients between pairs of catchments on human footprint, precipitation, surface water area.

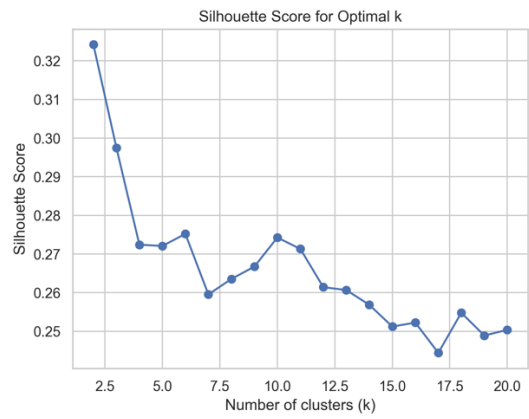
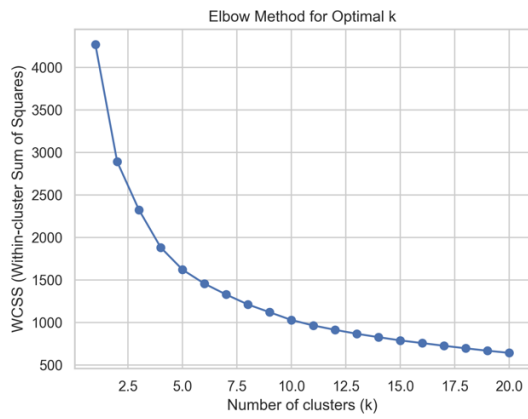


Figure S8. Selection of the number of cluster for KMeans analysis. The left plot shows the change of within-cluster sum of square (WCSS) with the increase of k, and the right plot shows the how silhouette score changes with k.

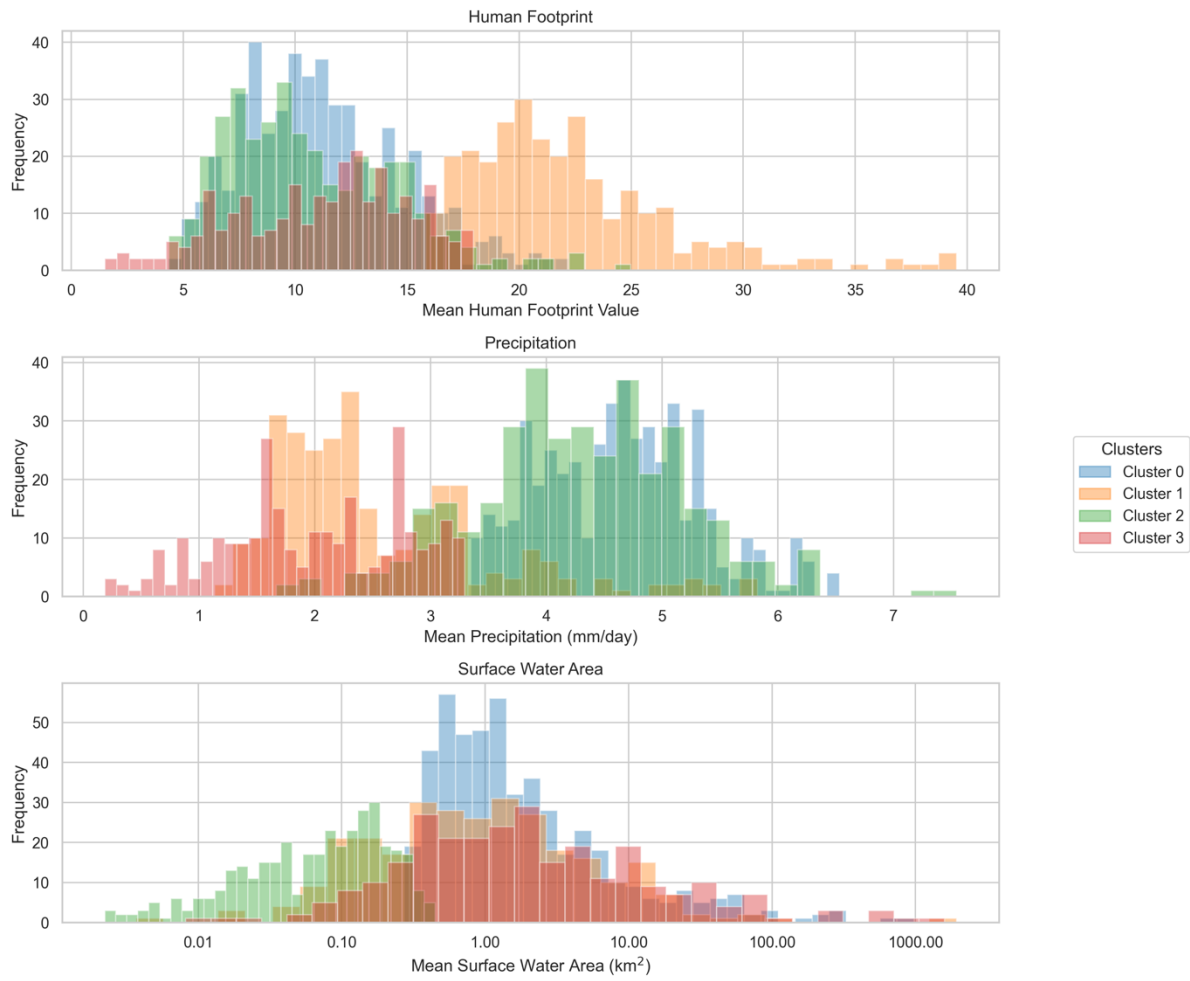


Figure S9. Distribution of the mean of human footprint, precipitation, surface water area, and annual surface water area by cluster.

Clusters on China Map

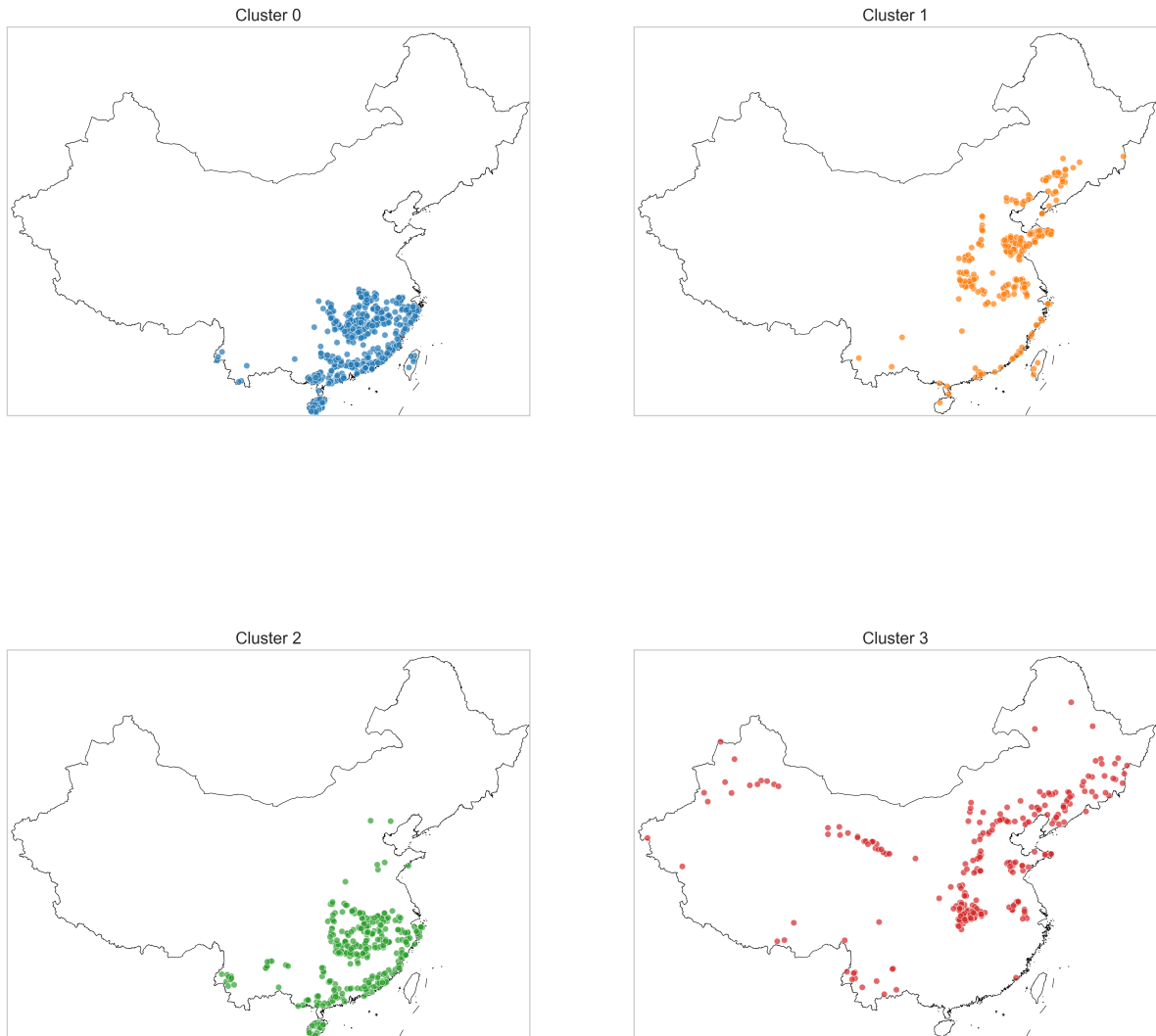


Figure S10. Distribution of the mean of human footprint, precipitation, surface water area, and annual surface water area by cluster.

HFP_SWA_rank Scatter Map by Clusters

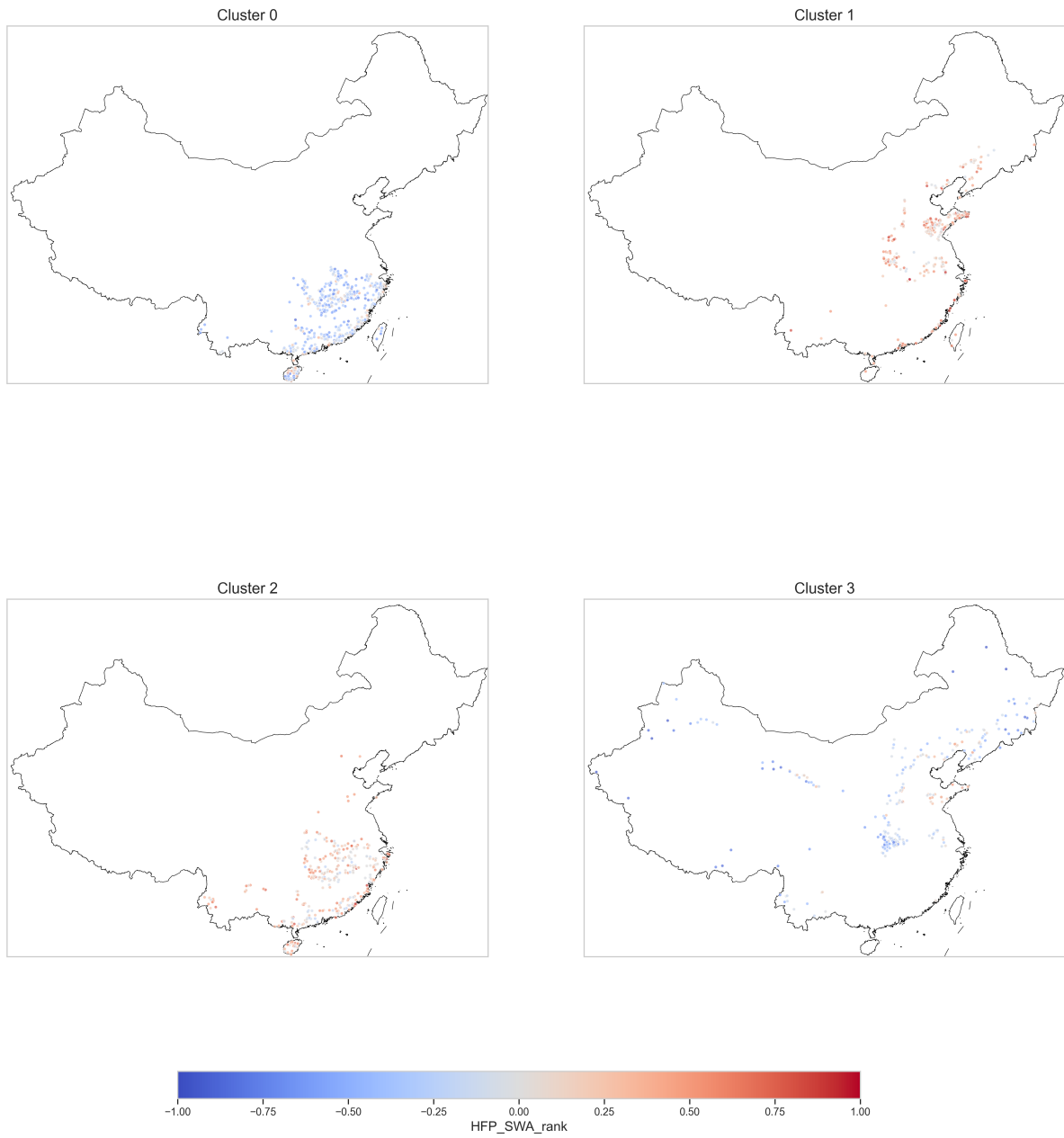


Figure 11. Geographical distribution of differences among the rank of human footprint and surface water area by cluster.

HFP_Prec_rank Scatter Map by Clusters

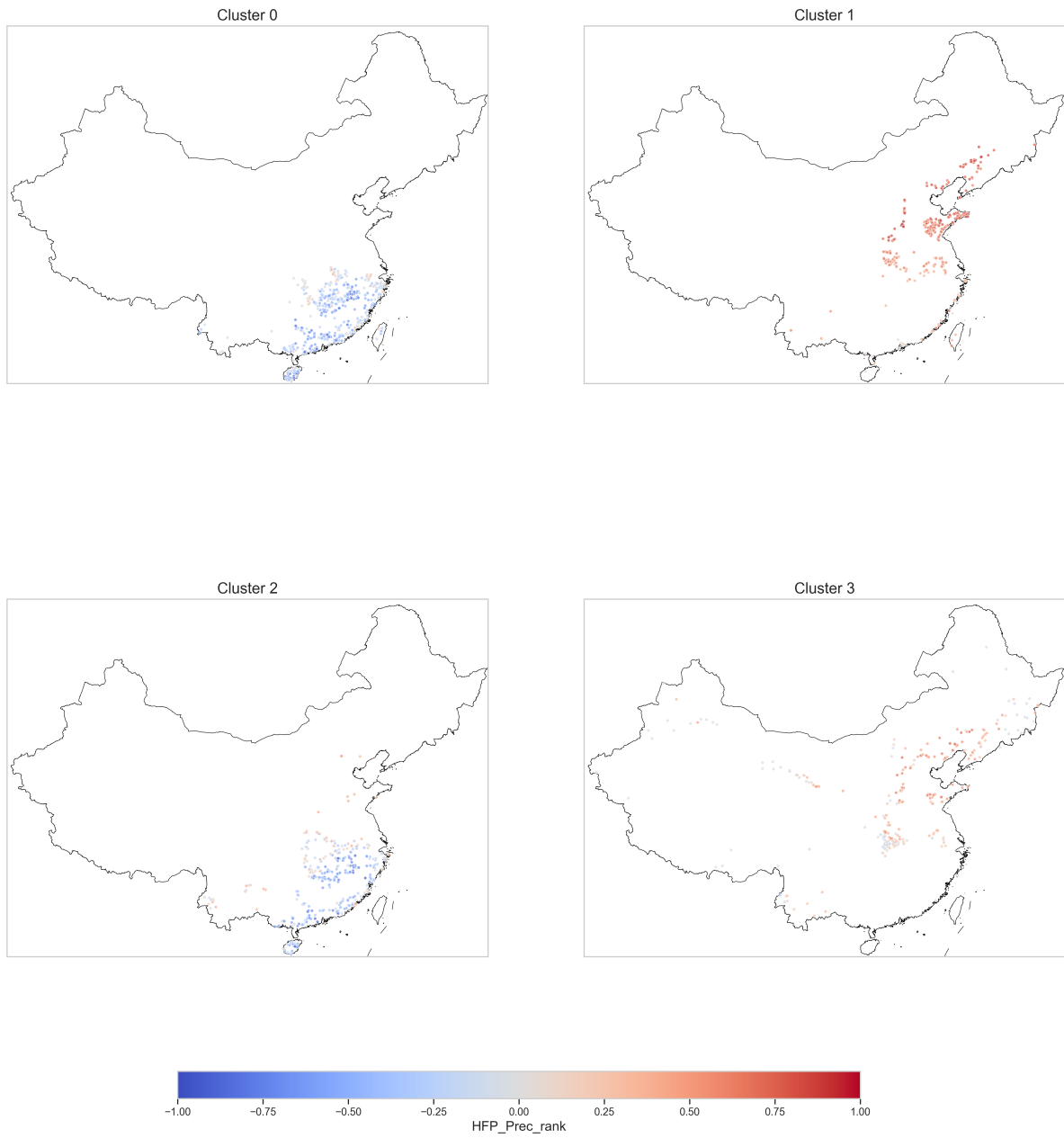


Figure 12. Geographical distribution of differences among the rank of human footprint and precipitation by cluster.