# Supplement of "Reconstruction of global gridded monthly sectoral water withdrawals for 1971-2010 and analysis of their spatiotemporal patterns"

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# Supplement material

Figure S1. Simulated annual irrigation water withdrawal using each of the following four GHMs (i.e., WaterGAP, H08, LPJmL, and PCR-GLOBWB) in comparison with FAO AQUASTAT data at country level and USGS estimation at state level.
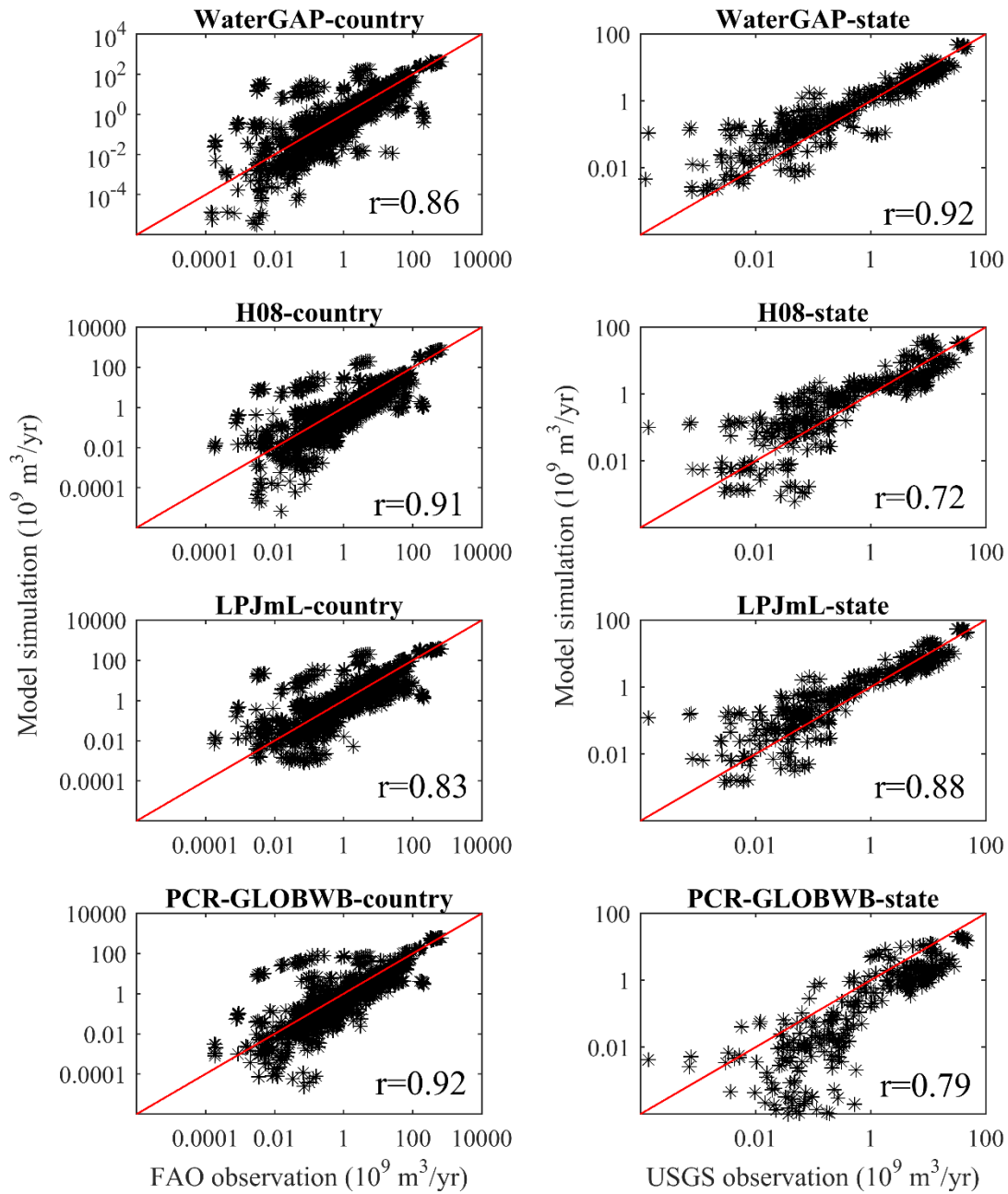
Figure S2. Mean monthly irrigation water withdrawal (normalized in percentage) in 32 GCAM regions simulated by four GHMs (i.e., WaterGAP, H08, LPJmL, and PCR-GLOBWB).
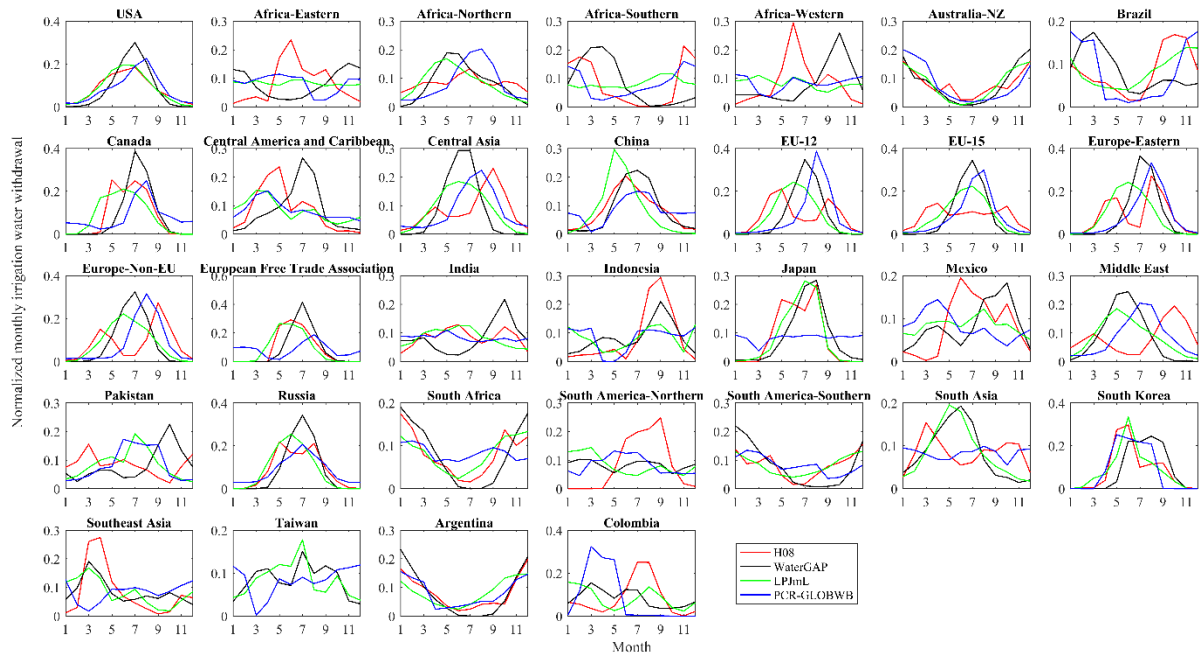
Figure S3. Spatial distribution of global dominant water withdrawal sectors.
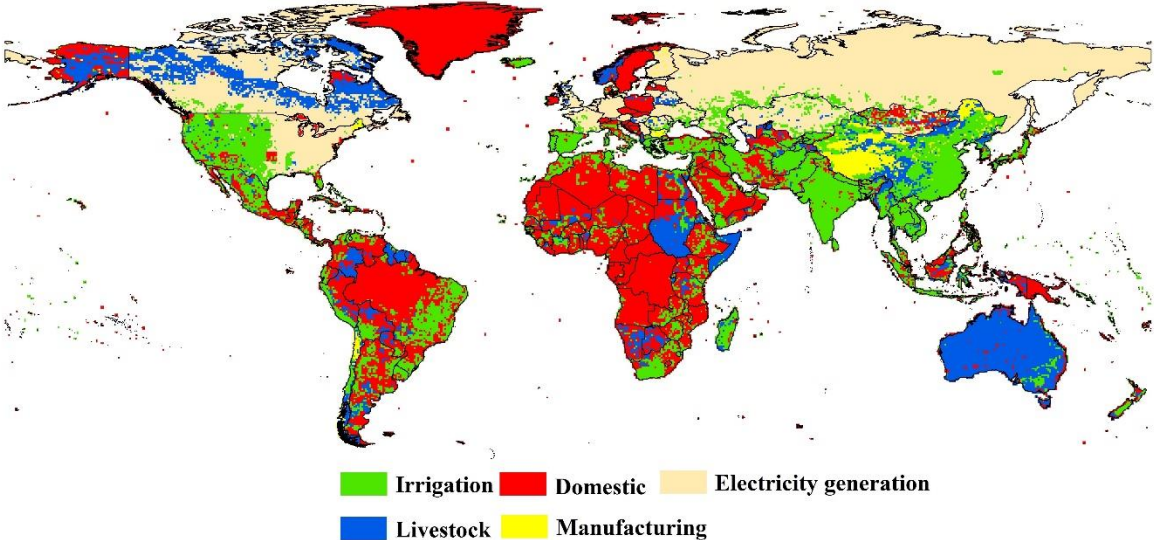
Figure S4 Monthly and annual time-series of total water withdrawal for global, China, the US, India and EU27 during 1971-2010
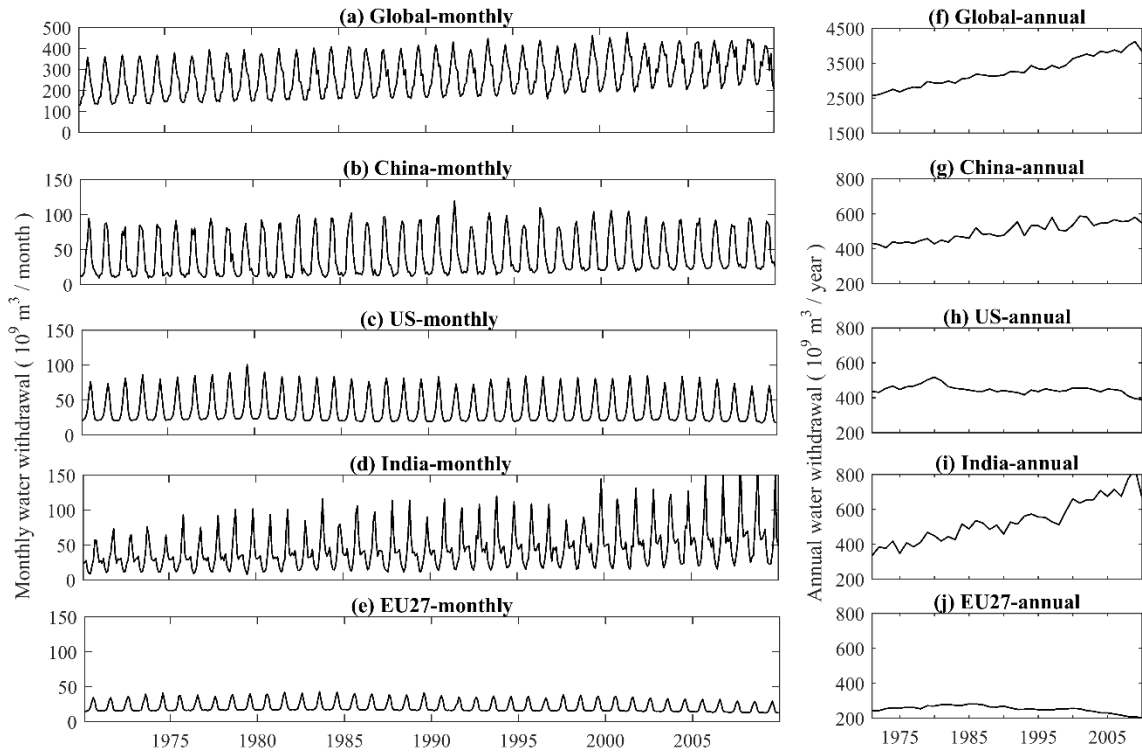
Figure S5. Monthly and annual time-series of irrigation water withdrawal for global, China, US, India and EU27 during 1971-2010.
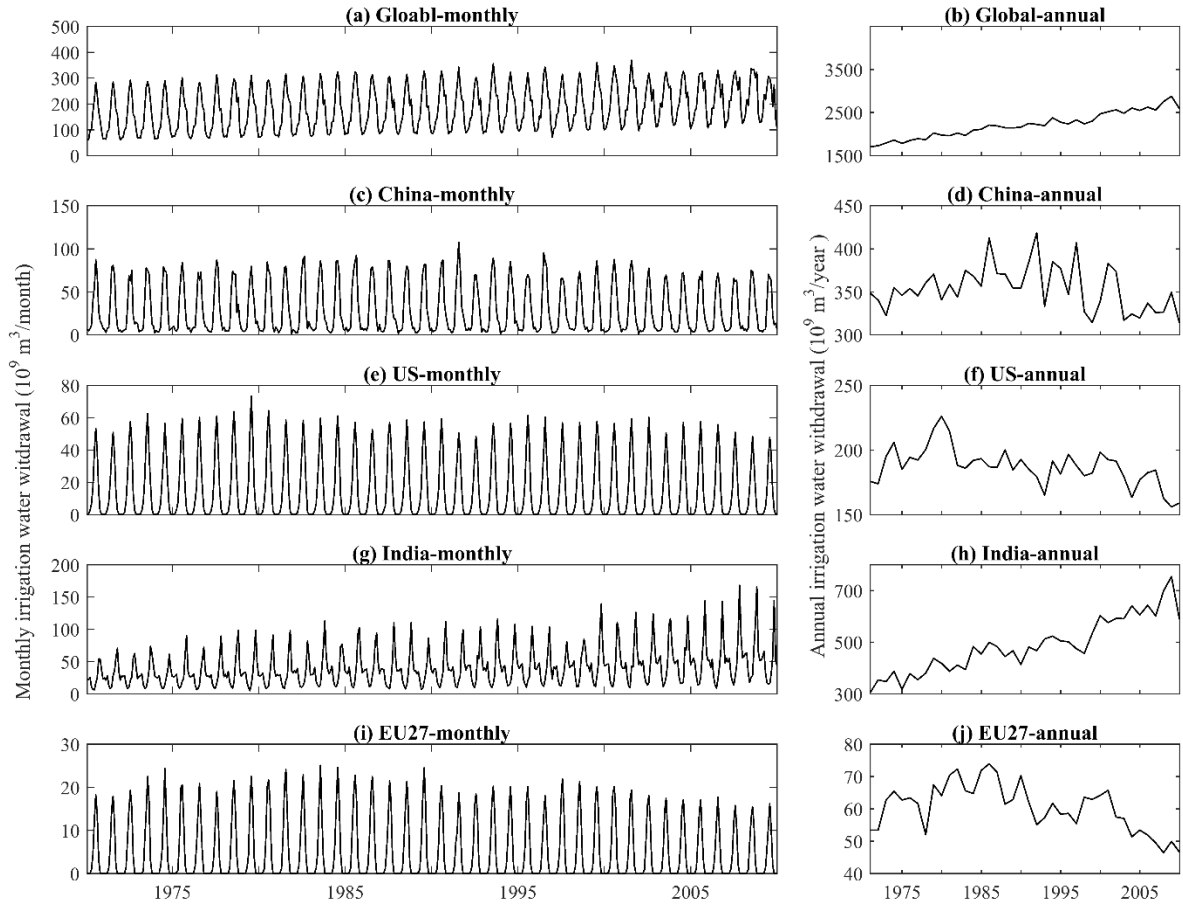
Figure S6. Monthly and annual time-series of domestic water withdrawal for global, China, US, India and EU27 during 1971-2010.
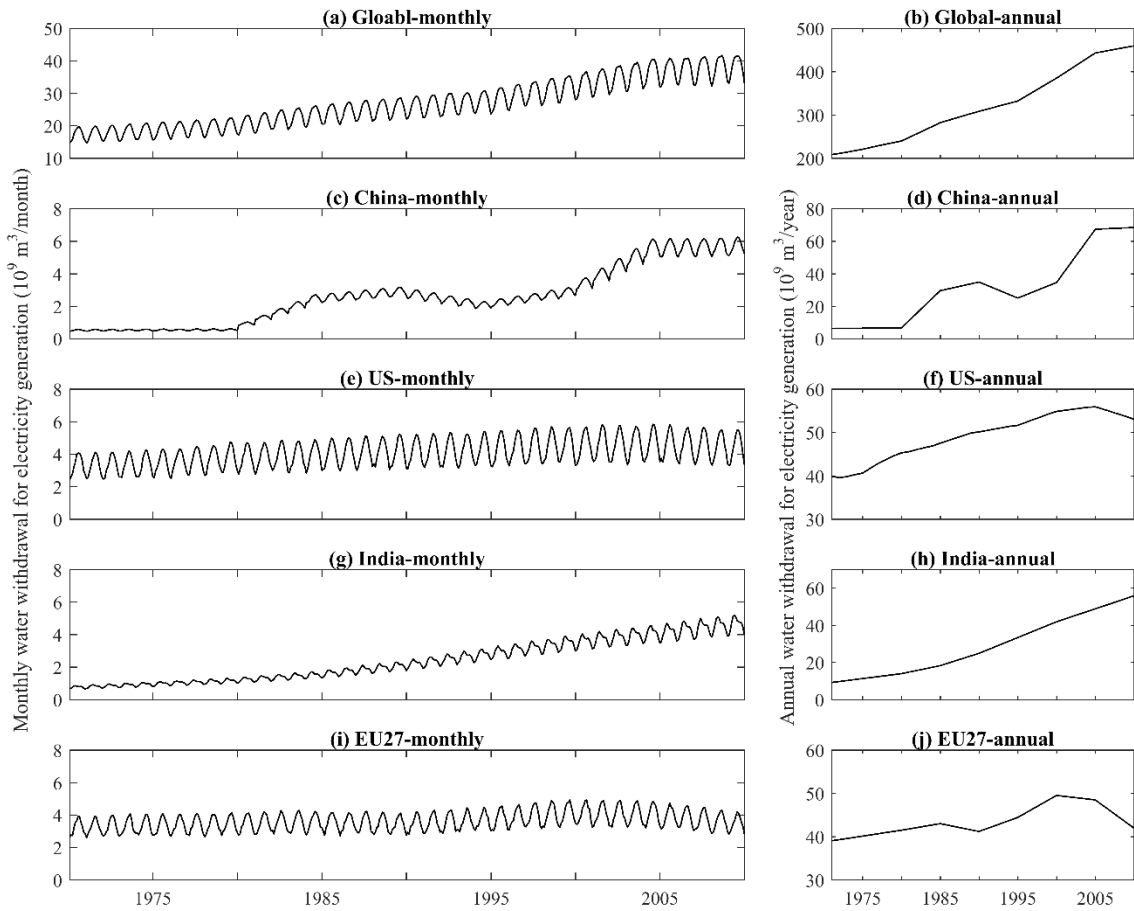
Figure S7 Monthly and annual time-series of electricity generation water withdrawal for global, China, US, India and EU27 during 1971-2010
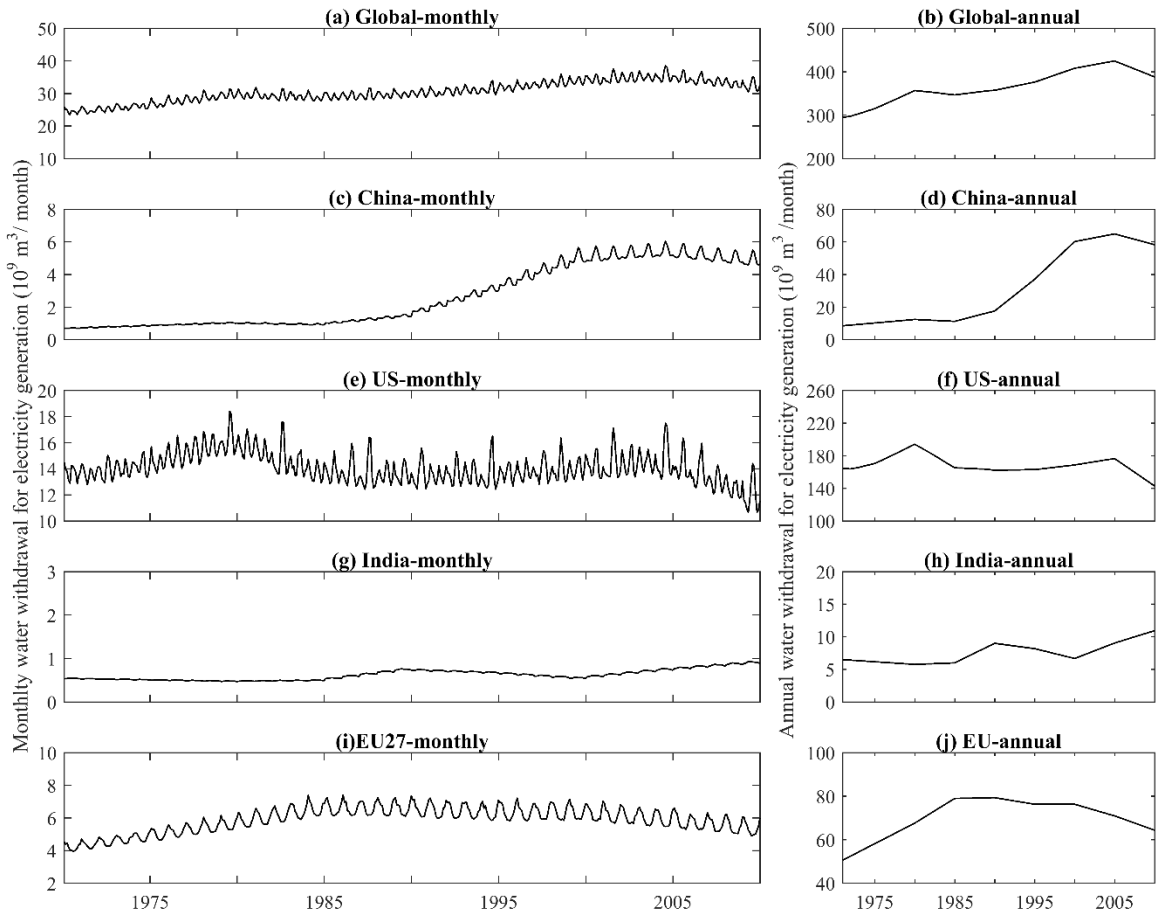
Figure S8. Annual time-series of water withdrawal by sector (mining, livestock, and manufacturing) for global, China, US, India and EU27 during 1971-2010.
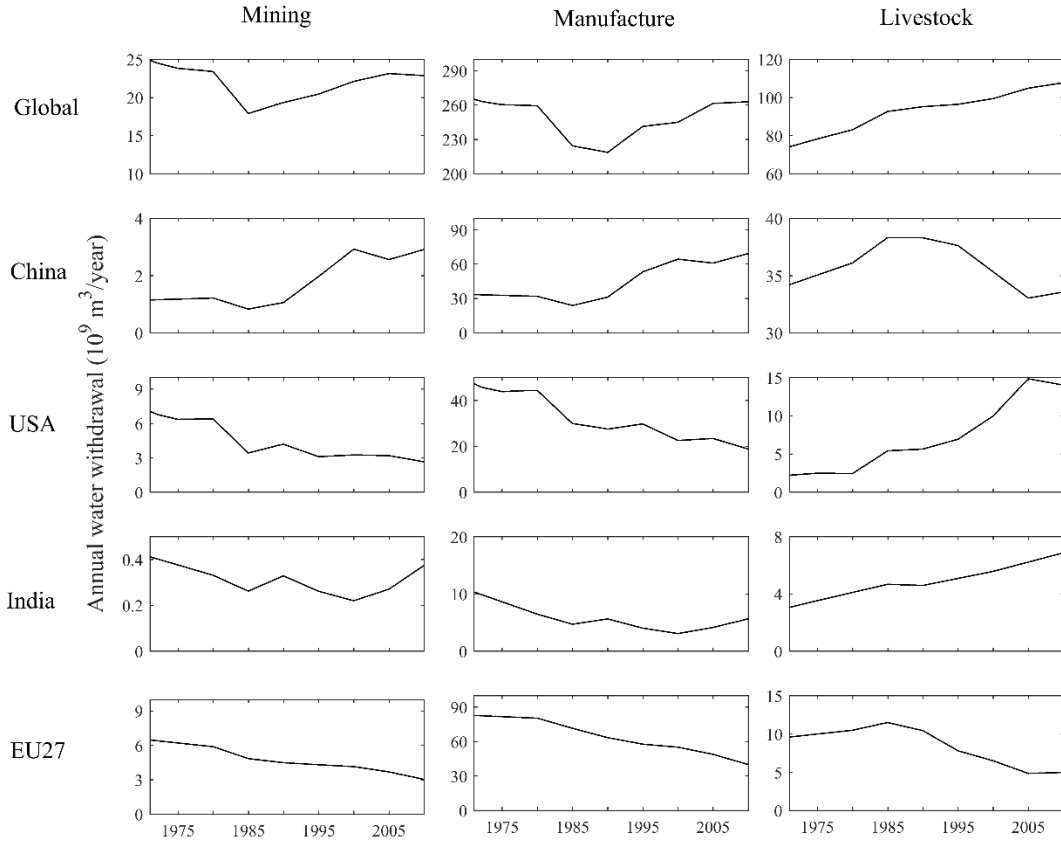
Figure S9 comparison of global water withdrawal used in this study with estimates from Flörke et al. (2013) and Shiklomanov (2000) for domestic and industrial sectors.
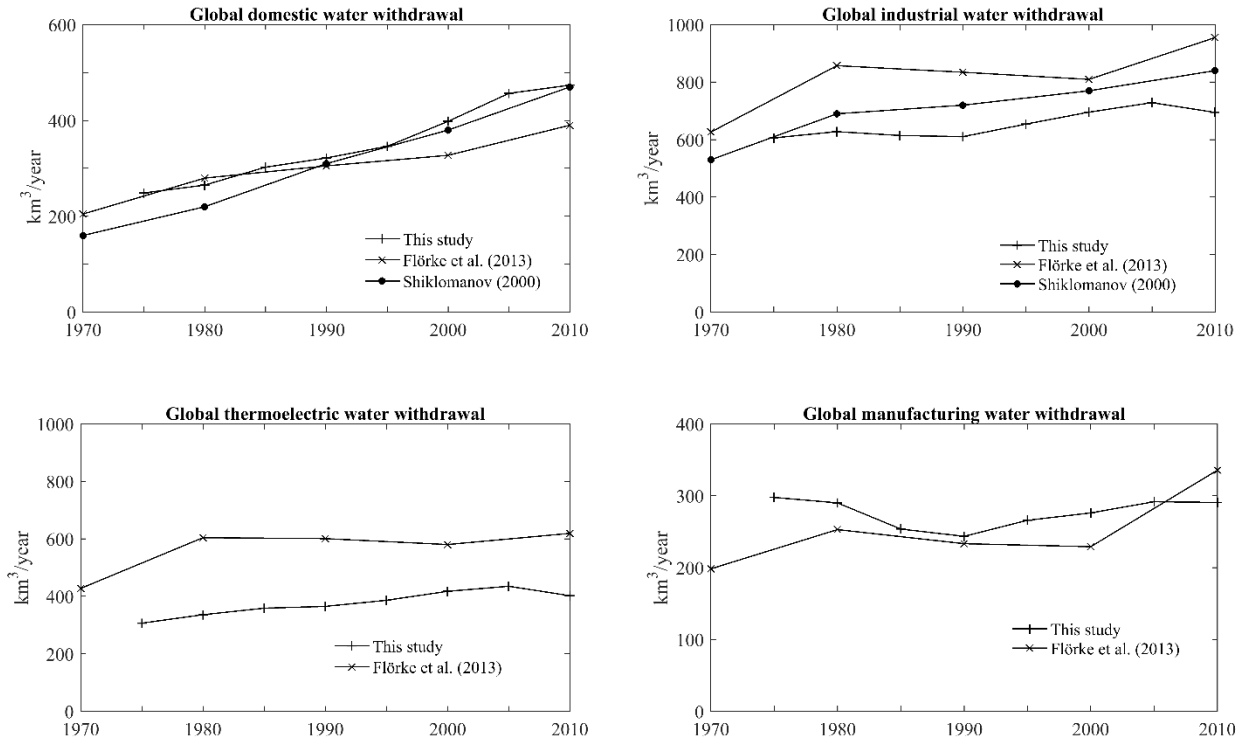
Figure S10 coefficient of variation (CV) of irrigation water withdrawal in JJA and DJF caused by multi-model framework and by multi-forcing data: December to February (DJF) and June to August (JJA) .
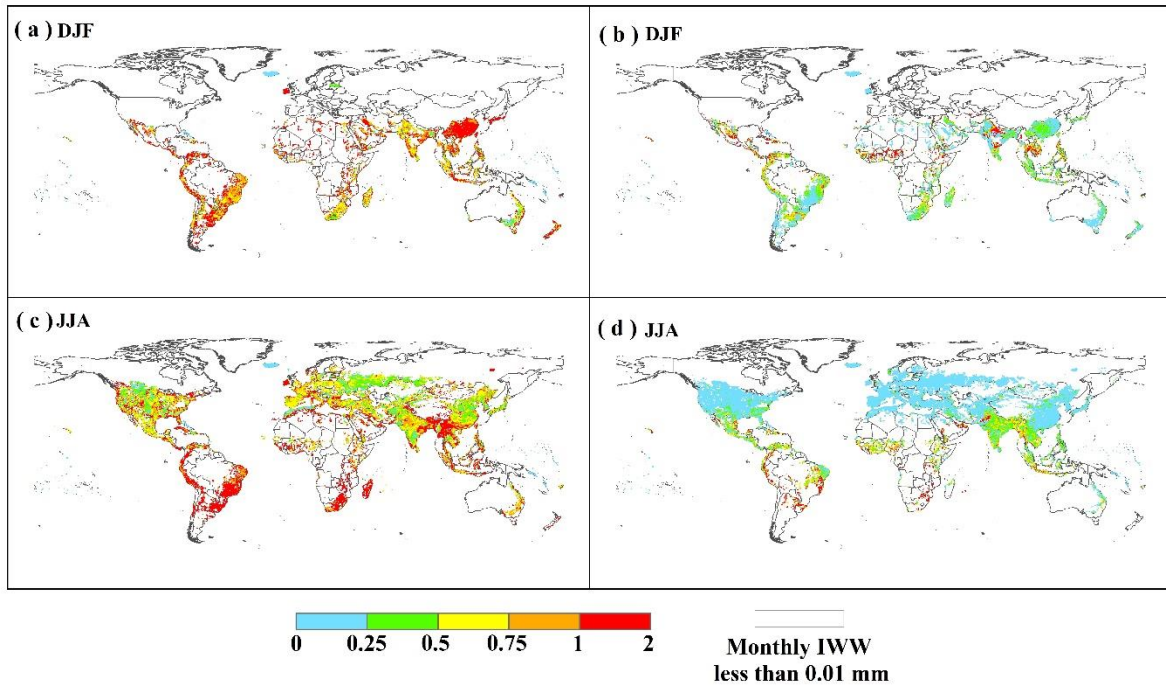
Figure S11 coefficient of variation (CV)  caused by different climate forcing in temporal downscaling of (a) domestic and (b) electricity generation in 4 seasons: : December to February (DJF), March to May (MAM), June to August (JJA) and September to November (SON).