

Supplementary material

Table S1. List of the selected CMIP6 models.

GCM name	Horizontal resolution (Lat. × Lon.)	Modeling institution
BCC-CSM2-MR	1.125°×1.125°	Beijing Climate Center, China
CanESM5	2.81°×2.81°	Canadian Centre for Climate Modeling and Analysis, Canada
FGOALS-g3	2.3°×2°	Institute of Atmospheric Physics, Chinese Academy of Sciences, China
IPSL-CM6A-LR	1.26°×2.5°	Institut Pierre Simon Laplace, France
MIROC6	1.4°×1.4°	Japan Agency for Marine-Earth Science and Technology, Japan
MPI-ESM1-2-LR	1.5°×1.5°	Max Planck Institute for Meteorology, Germany

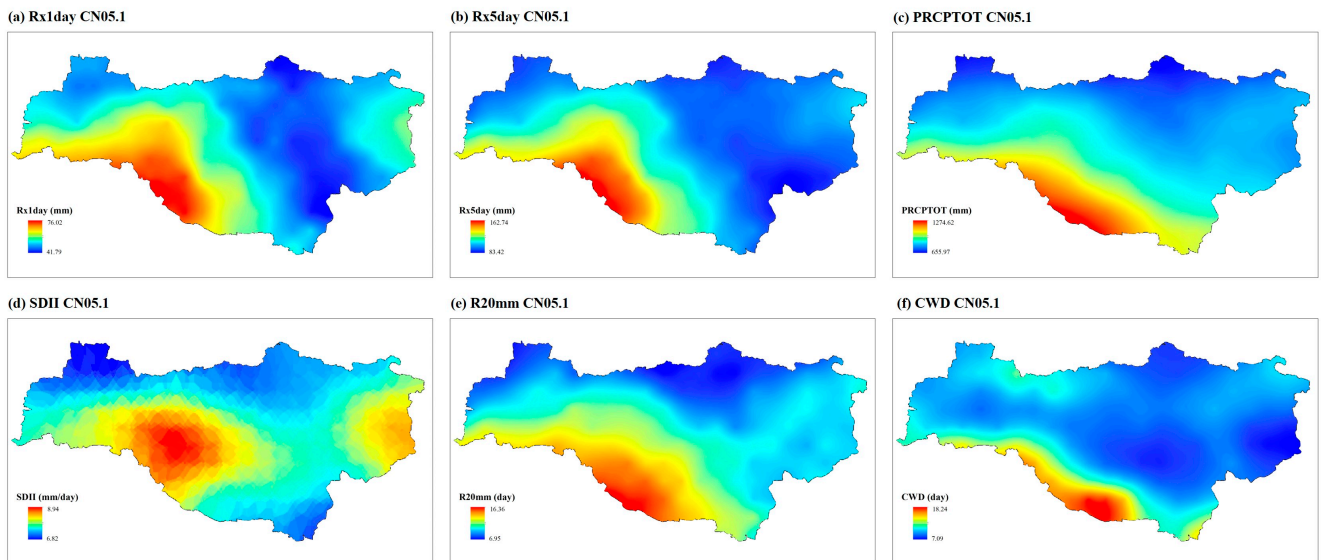


Figure S1. Spatial distribution of observed Rx1day, Rx5day, PRCPTOT, SDII, R20mm, and CWD based on CN05.1 in the upper HRB during baseline period (1995–2014).

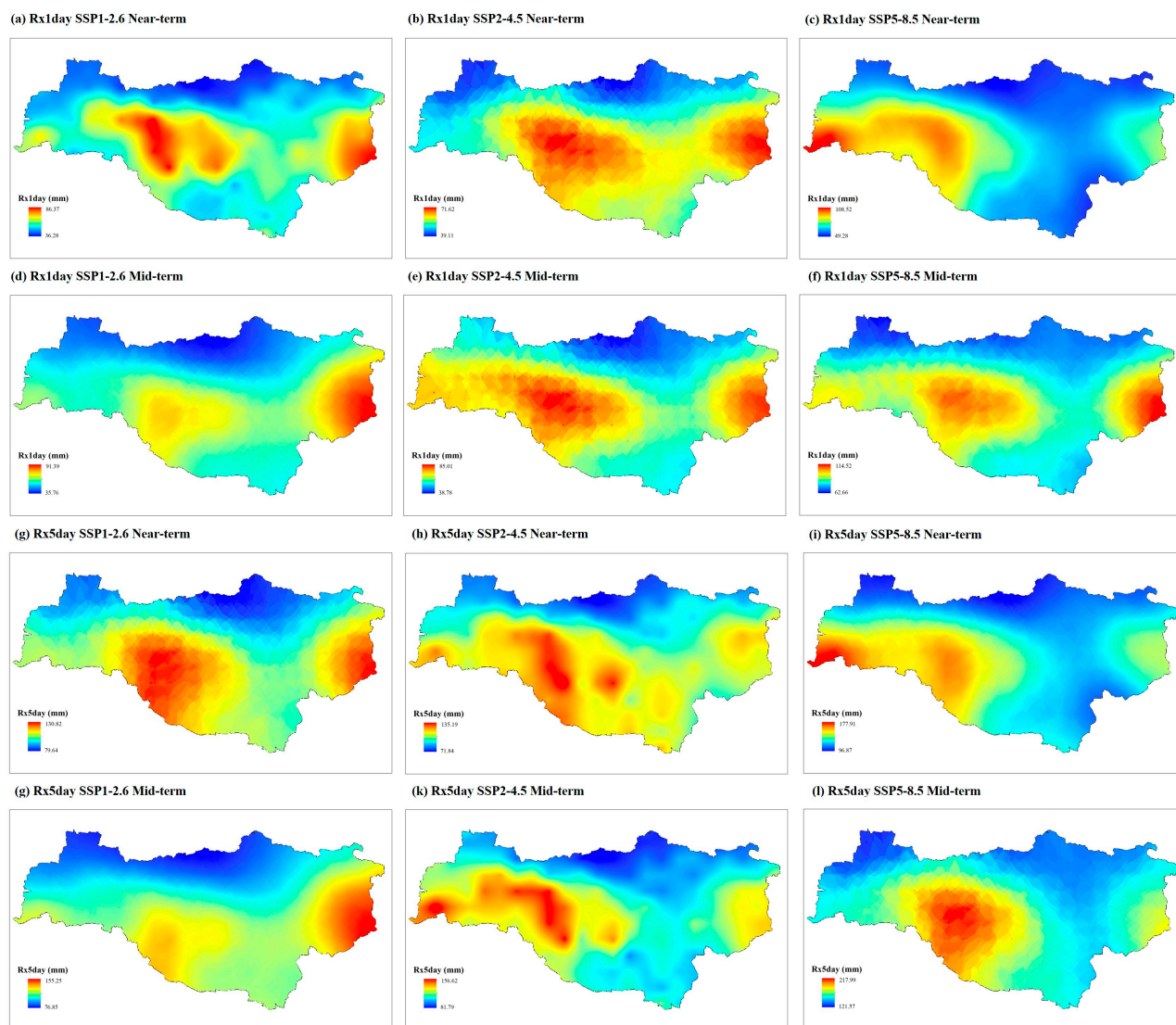


Figure S2. Spatial distribution of projected Rx1day, Rx5day in the upper HRB during Near-term (2023–2042) and Mid-term (2043–2062) under the three SSP-RCP scenarios.

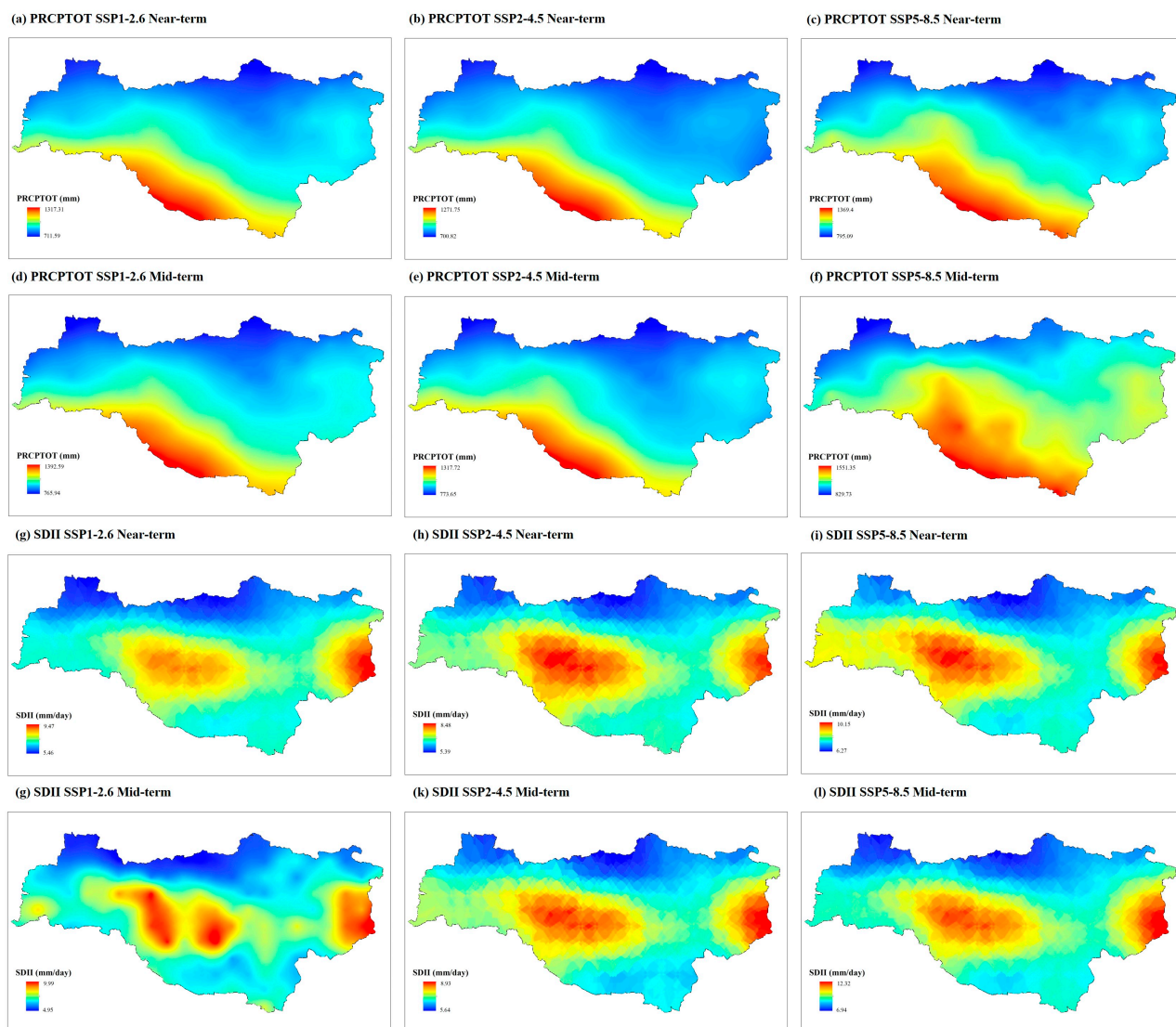


Figure S3. Spatial distribution of projected PRCPTOT, SDII in the upper HRB.

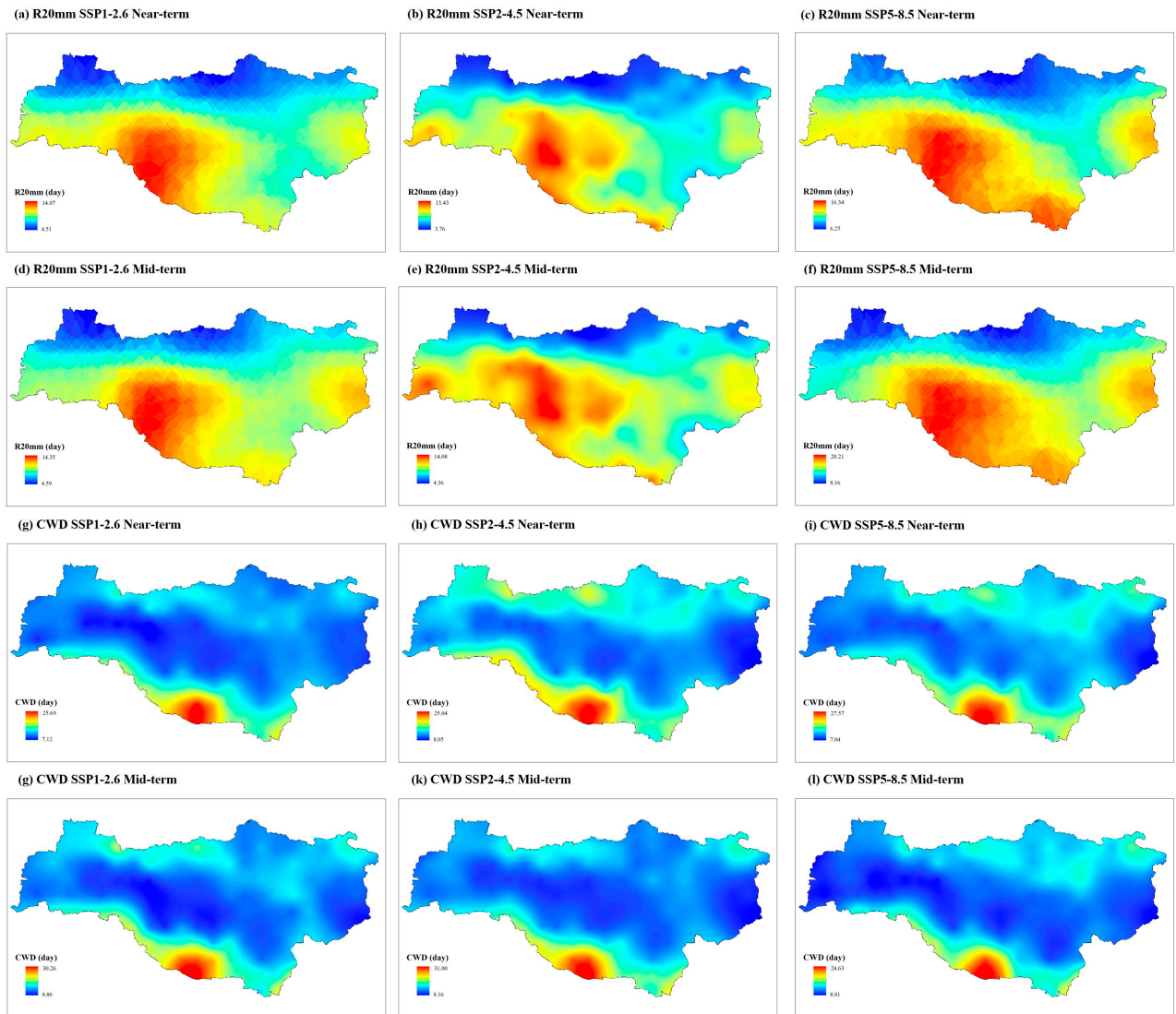


Figure S4. Spatial distribution of projected R20mm, CWD in the upper HRB.

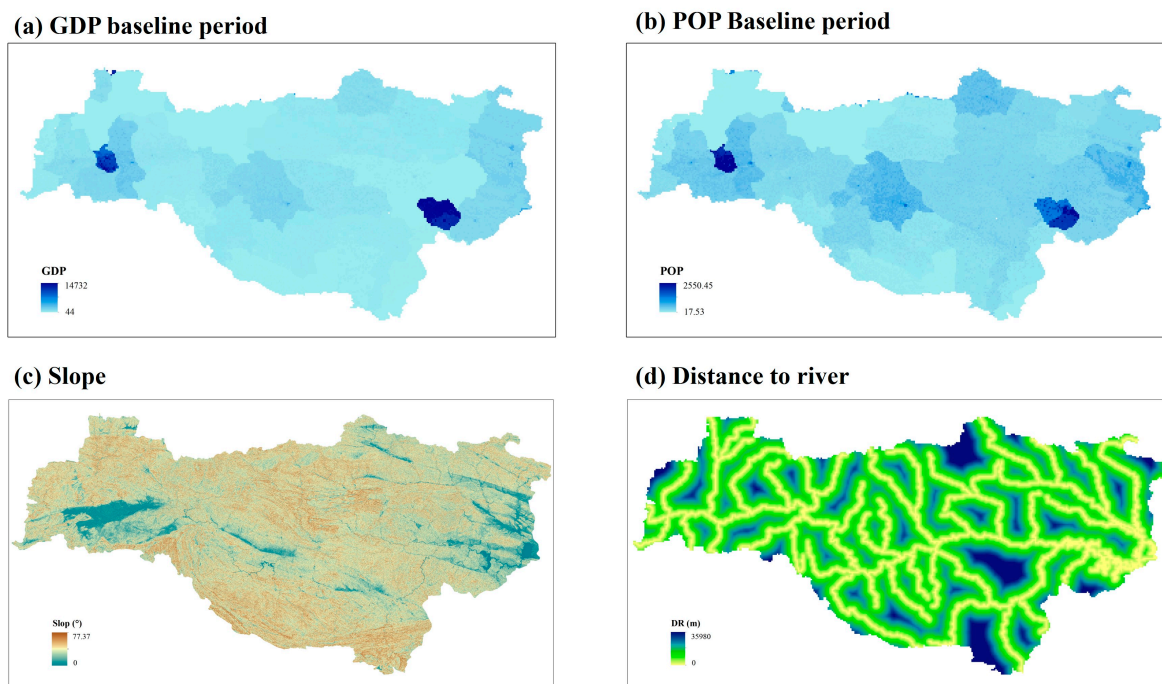


Figure S5. Spatial distribution of GDP, POP, slope, and distance to river in the upper HRB.

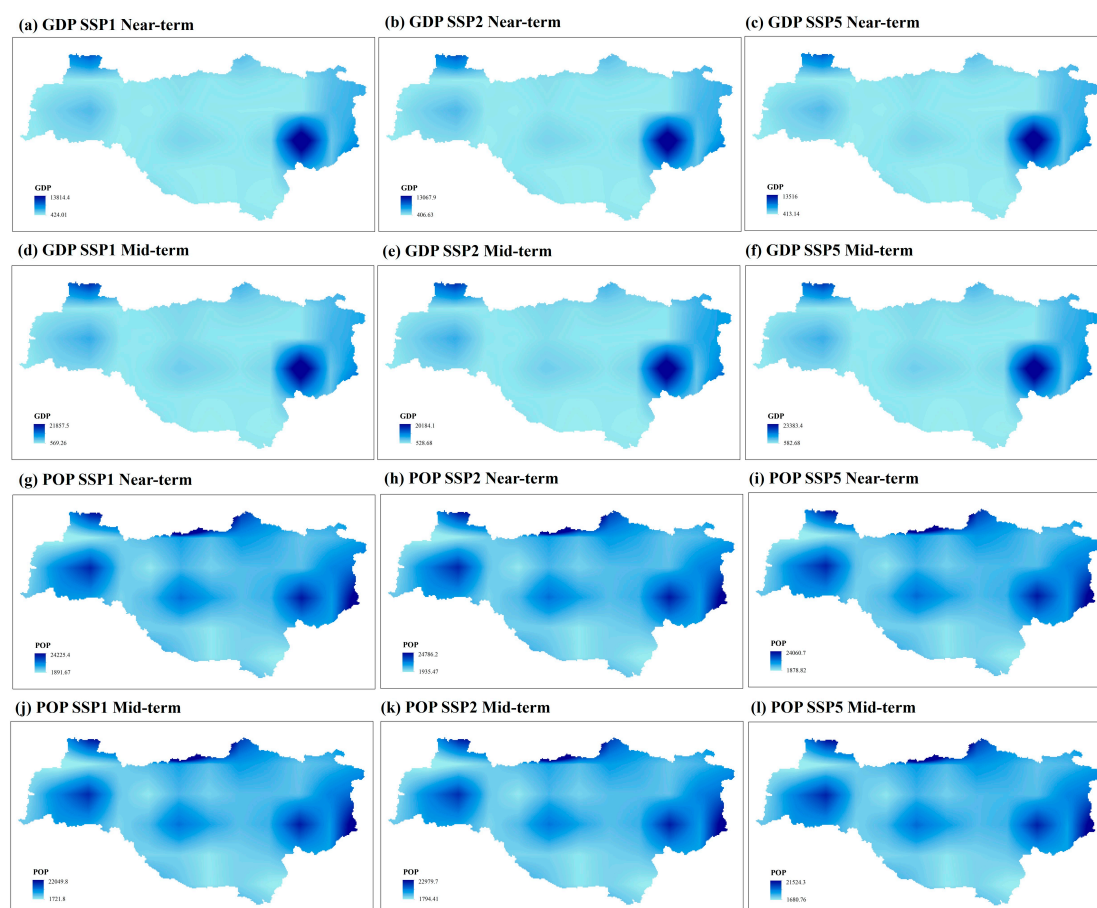


Figure S6. Spatial distribution of GDP, POP in the upper HRB.