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**Table 1.** Global climate models (GCMs) from the CMIP5 experiment used in this study.

Model abbreviation	ID	Original institution	Country
BCC-CSM1.1	1	Beijing Climatic Center	China
BNU-ESM	2	Beijing Normal University	China
GFDL-ESM2G	3	NOAA Geophysical Fluid Dynamics	USA
GFDL-ESM2M	4	Laboratory	
INMCM4	5	Institute for Numerical Mathematics	Russia
IPSL-CM5A-MR	6	Institut Piere-Simon Laplace	France
NorESM1-M	7	Norwegian Climate Center	Norway

**Table 2.** Description of the two representative concentration pathways (RCPs) used in this study (van Vuuren et al.,2011).

RCP	Scenario
4.5	Stabilization without overshoot pathway to 4.5 W/m <sup>2</sup> (~650 ppm CO <sub>2</sub> equivalent) at stabilization after 2100
8.5	Rising radiative forcing pathway leading to 8.5 W/m <sup>2</sup> (~1370 ppm CO <sub>2</sub> equivalent) by 2100

**Table 3.** The values of  $\Delta RRI$ , comparing the historical period with two future periods under RCP4.5 and RCP8.5.

Model abbreviation	$\Delta RRI$			
	RCP4.5(2040s)	RCP4.5(2080s)	RCP8.5(2040s)	RCP8.5(2080s)
BCC-CSM1.1	105	90	74	98
BNU-ESM	46	73	46	97
GFDL-ESM2G	69	124	93	109
GFDL-ESM2M	120	128	137	152
INMCM4	118	66	87	86
IPSL-CM5A-MR	115	110	119	165
NorESM1-M	95	89	98	82
Ensemble	41	58	39	62
Average	88.625	92.25	86.625	106.375

**Table 4.** The M-K test results of future precipitation, temperature, and streamflow.

GCMs	Precipitation		Temperature		Streamflow	
	RCP4.5	RCP8.5	RCP4.5	RCP8.5	RCP4.5	RCP8.5
BCC-CSM1.1	↑	↑	↑	↑	2040s	↑
					2080s	↑
BNU-ESM	—	—	↑	↑	2040s	↑
					2080s	↑
GFDL-ESM2G	—	—	↑	↑	2040s	↑
					2080s	↑
GFDL-ESM2M	—	↑	↑	↑	2040s	↑
					2080s	↑
INMCM4	↑	↑	↑	↑	2040s	↑
					2080s	↑
IPSL-CM5A-MR	—	↓	↑	↑	2040s	—
					2080s	↑
NorESM1-M	↑	↑	↑	↑	2040s	↑
					2080s	↑
Ensemble	↑	↑	↑	↑	2040s	↑
					2080s	↑

Note. The symbols ↑, —, and ↓ represent a significant upward trend ( $|Z| > 1.96$ ), no significant trend, and a significant downward trend, respectively.