## Dynamics of green and blue water flows and their controlling factors in Heihe River basin of northwestern China

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## Appendix A

We use the three statistical tests, including MK, SMK, TS, to estimate the dynamics of temperature and rainfall for eleven counties. The results were shown in Figure. A1 and Table A1.



**Figure A1:** Dynamic of rainfall for eleven counties of the Heihe River basin, comprising Qilian (a and b), Sunan (c and d), Ganzhou (e and f), Mingle (g and h), Shandan (I and j), Linze (k and l), Suzhou (m and n), Jiayuguan (o and p), Gaotai (q and r), Jinta (s and t) and Ejilaqi (u and v). Note: TS is the Theil-Sen test; \* indicate the significant is at p < 0.05; NS indicate the test is not significant; Z > 0 indicates an increase trend and Z < 0 indicates a decrease trend; Q represents the change rate; u(t) > u(t) denotes an increasing trend, while u(t) < u(t) denotes a decreasing trend.

Table. A1 The results of the Mann-Kendall test (MK), sequential Mann-Kendall test (SMK), and Theil-Sen estimator test (TS) for eleven

counties of mean temperature in the Heihe River basin.

Counties	МК	SM K	TS	County	МК	SM K	TS
Suzhou	S (**) ↑	2000↑	0.042	Jinta	S (**) ↑	2000↓	0.042
Shandan	S (**) ↑	1991↑	0.059	Jiayuguan	S (**) ↑	2000↓	0.042
Qilian	S (**) ↑	1996↑	0.056	Gaotai	S (**) ↑	1993↑	0.053
Mingle	S (**) ↑	1993↑	0.060	Ganzhou	S (**) ↑	1997↑	0.064
Linze	S (**) ↑	1996↑	0.058	Ejilaqi	S (**) ↑	1996↑	0.062
Sunan	S (**) ↑	1996↑	0.054				

Note: TS represents the Theil-Sen test and whose value of represents the change rate; \*\* shows the significant is at p < 0.01;  $\uparrow$  signals an

uptrend and  $\downarrow$  signals an downtrend.