

Supplementary Materials

Table S1. Agro-ecological risk of land index and decomposition by region in the HRB, 1995–2020.

Region	Risk Index (<i>Tfpch</i>)				
	Technical efficiency index (<i>Effch</i>)			Technological progress index (<i>Techch</i>)	
	Pure technology efficiency index (<i>Pech</i>)	Scale efficiency index (<i>Sech</i>)			
Ejina Banner	1.000	0.971	0.971	0.876	0.851
Jinta County	1.000	1.000	1.000	0.988	0.988
Suzhou District	0.990	0.975	0.965	1.028	0.992
Jiayuguan City	1.000	1.000	1.000	1.038	1.038
Gaotai County	0.980	1.025	1.005	0.891	0.896
Sunan County	1.000	1.000	1.000	0.894	0.894
Linze County	1.000	1.000	1.000	0.892	0.892
Ganzhou District	1.000	1.000	1.000	0.959	0.959
Shandan County	1.002	1.057	1.059	0.947	1.002
Minle County	1.000	1.040	1.040	0.982	1.021
Qilian County	1.000	1.000	1.000	0.815	0.815
Mean value	0.997	1.006	1.003	0.935	0.938

Table S2. Matching coefficients agricultural of WLR in HRB from 1995 to 2020 (104m³/hm²)

Region	Time	1995	2000	2005	2010	2015	2020
Ejina Banner		0.344	0.446	0.397	0.348	0.360	0.486
Jinta County		0.569	0.653	0.720	0.623	0.458	0.474
Suzhou District		0.846	0.808	0.770	0.722	0.630	0.600
Jiayuguan City		0.870	0.942	0.878	0.804	0.652	0.554
Gaotai County		0.755	0.663	0.509	0.476	0.473	0.432
Sunan County		0.650	0.533	0.570	0.415	0.237	0.412
Linze County		0.847	0.824	0.746	0.707	0.651	0.545
Ganzhou District		0.831	0.840	0.766	0.731	0.699	0.620
Shandan County		0.803	0.789	0.734	0.768	0.503	0.563
Minle County		0.771	0.792	0.749	0.711	0.576	0.524
Qilian County		0.761	0.764	0.741	0.703	0.586	0.401
HRB		0.769	0.735	0.673	0.647	0.559	0.527

Table S3. regression equation between matching coefficient of WLR and ecological risk of agricultural water resources.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PPXS?	0.777446	0.382514	2.032464	0.0485
POP?	0.012473	0.005439	2.293113	0.0269
C	-0.171040	0.416966	-0.410200	0.6837
R-squared	0.208699	Mean dependent var		0.907343
Adjusted R-squared	-0.017387	S.D. dependent var		0.265581
S.E. of regression	0.267880	Sum squared resid		0.406507
F-statistic	0.923096	Durbin-Watson stat		1.959130
Prob(F-statistic)	0.533238			