

Figure S1. Spatial distribution of land use types in Qionglai. (a, b, c) are spatial distribution map of land use types in 2010, 2015 and 2020.

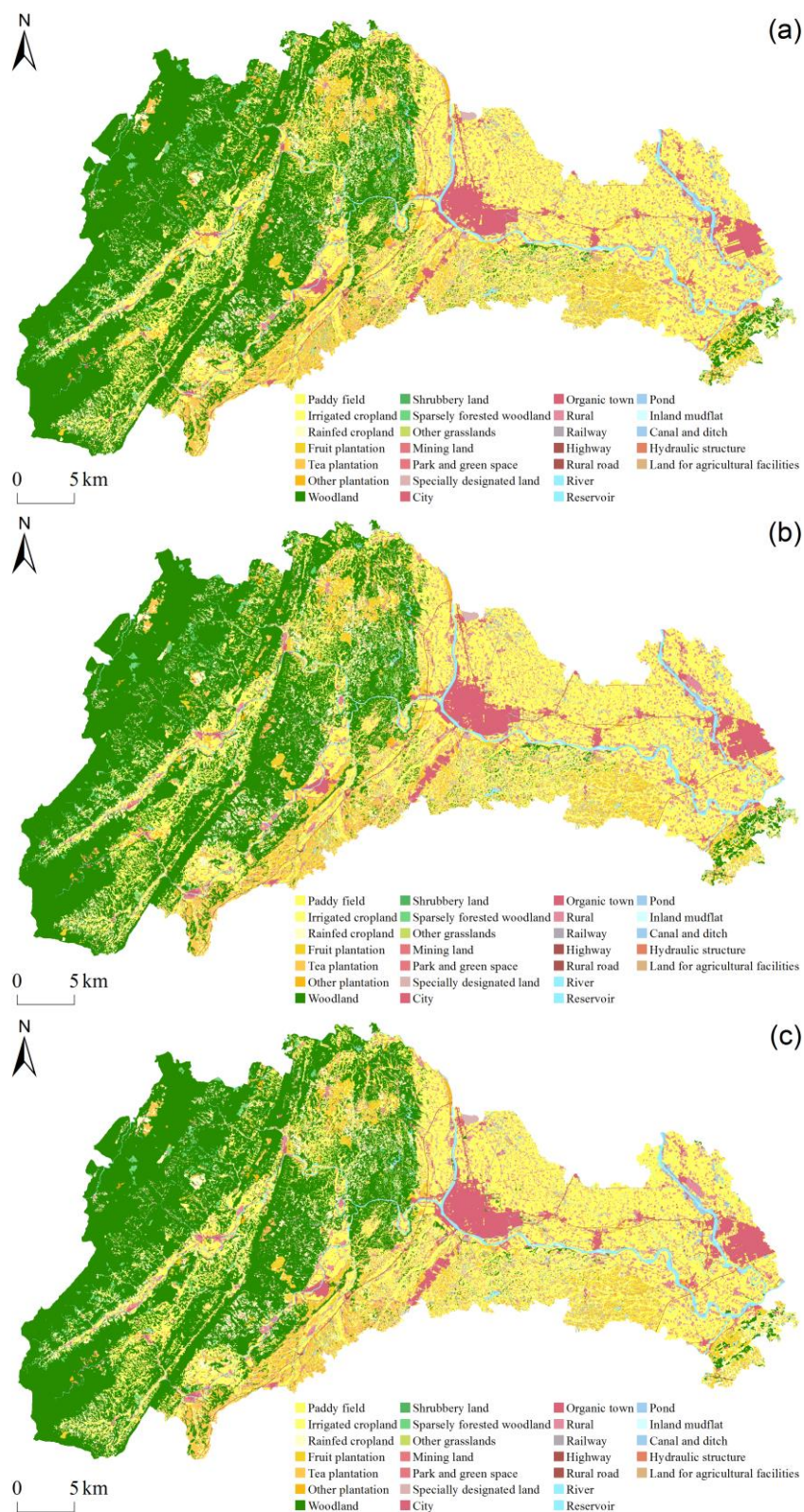


Figure S2. Spatial distribution of the first-level types of territorial space classification in Qionglai. (a, b, c) are spatial distribution map of the first-level types of territorial space classification in 2010, 2015 and 2020.

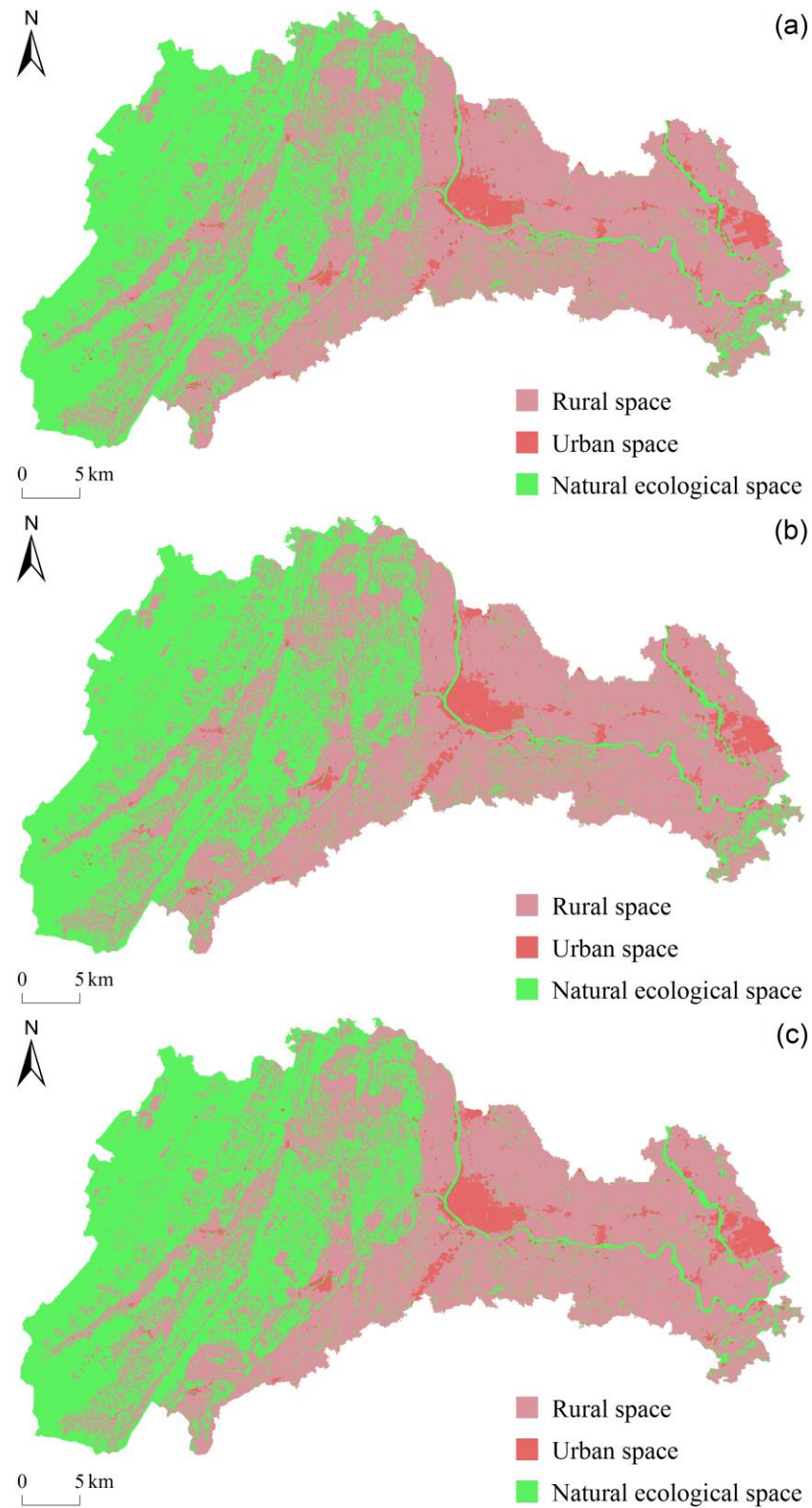




Figure S3. Spatial distribution of the second-level types of territorial space classification in Qionglai. (a, b, c) are spatial distribution map of the second-level types of territorial space classification in 2010, 2015 and 2020.

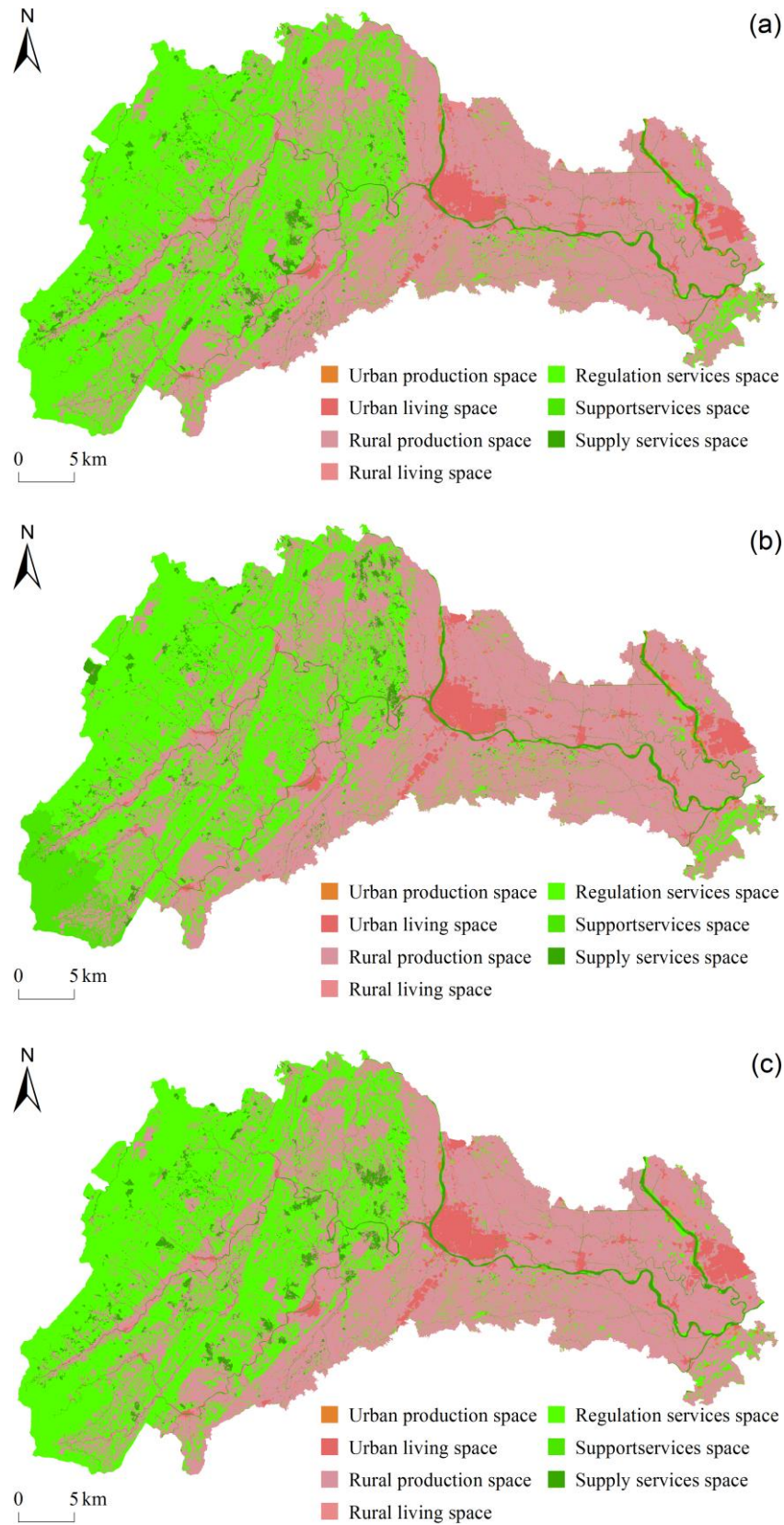


Table S1. Description of the third-level types of territorial space classification in Table 2

Code	Name	Description
U11	Industrial products supply	Areas mainly used in industrial production such as mining, manufacturing and so on, as well as providing material storage, transit transportation and so on.
U12	Service industrial products supply	Areas mainly used in commercial and service industries such as wholesale and retail, accommodation and catering, business finance and so on.
U21	Urban residential carrying	Areas that mainly provide living places for urban residents.
U22	Urban living security	Areas that mainly provide urban residents with public service facilities such as travel, education, medical and health, as well as ecological services and employment guarantees.
R11	Agricultural products supply	Areas mainly used for the production of primary agricultural products such as grain, oil, cotton, meat, eggs, milk, livestock, and aquatic products and so on.
R12	Transportation services supply	Areas such as ground lines (railroads, highways, etc.) and stations (ports, wharves, etc.) used for transportation outside of towns and villages.
R21	Rural residential carrying	Areas that mainly provide living places for rural residents.
R22	Rural living security	Areas that mainly provide rural residents with public service facilities such as travel, education, medical and health, as well as ecological services and employment guarantees.
E11	Raw materials production	Areas with the main major ecosystem service capabilities, such as converting solar energy into animal and plant products and biological energy and so on.
E12	Water supply	Areas with the main major ecosystem service capabilities, such as freshwater filtration, retention, storage and supply and so on.
E21	Gas regulation	Ecological areas that play a major role in regulating regional atmospheric chemical components (fixing CO <sub>2</sub> and releasing O <sub>2</sub> ).
E22	Climate regulation	Ecological areas that play a major role in regulating of regional climate, such as increase precipitation and decrease temperature.
E23	Environmental purification	Ecological areas that play a major role in regional environmental purification (e.g., purification of water and air, remove excess nutrients and compounds by biological decomposition, and retention of dust in vegetation, etc.).
E31	Soil conservation	Areas with the main ecosystem service capabilities such as maintaining soil fertility (nutrient cycling and accumulation) and controlling soil erosion and landslides and so on.
E32	Biodiversity maintenance	Areas with the main major ecosystem service capabilities, such as providing habitats for wild animals and plants and maintaining biodiversity and so on.
E41	Aesthetic landscape	Areas with dominant landscape functions including potential recreational, cultural and artistic values, and so on.

Table S2. The  $q$ -value hierarchical statistical information table in 2010

Land use type	Function	$N_1$	$N_2$	$N_3$	$N_4$	$N_5$	$\mu_1$	$\mu_2$	$\mu_3$	$\mu_4$	$\mu_5$	$\sigma_1$	$\sigma_2$	$\sigma_3$	$\sigma_4$	$\sigma_5$	$L$	$N$	$\bar{Y}$	$\sigma^2$	$q$ -value	$F$	$\lambda$	$F_\alpha$	$P$ -value
Tea plantation	Agricultural products supply	405	546	614	848	8625	1234.6	1237.7	1342.5	1348.7	3849.5	1725070.9	1958550.2	2409605.6	2086117.2	75523775.4	5	11038	3292.8	60576568.0	0.018***	51.412	0.005	2.376	0.000
	Climate regulation	115	214	222			712.6	924.1	865.8			335953.0	719916.1	572478.3			3	551	856.5	586504.7	0.010	2.894	0.010	3.027	0.057
	Raw materials production	19	30	8			803.0	1192.8	1312.3			303677.4	1447307.4	1429220.1			3	57	1079.6	1103412.7	0.036	1.012	0.431	3.816	0.443
	Soil conservation	13	14	52			574.0	500.5	819.4			149680.1	151069.5	353528.2			3	79	722.5	302651.6	0.061	2.481	0.076	3.234	0.098
Canal and ditch	Climate regulation	5	38	128			2165.7	3538.6	3754.8			5373493.1	18147325.0	36424753.4			3	171	3660.3	31530465.4	0.002	0.201	0.106	3.210	0.827
	Biodiversity maintenance	76	18	3			4423.9	1760.4	218.7			98801400.3	3637355.1	653.6			3	97	3799.6	79560003.3	0.019	0.887	0.006	3.103	0.416
	Water supply	63	61	35			5846.1	6633.3	15877.2			73420268.3	86434696.9	503591790.4			3	159	8356.2	189191959.2	0.085**	7.249	0.518	3.796	0.003
Shrubbery land	Biodiversity maintenance	16	88	53			2351.5	5640.4	6705.2			8428869.8	34555667.5	153589369.6			3	157	5664.7	73560916.2	0.020	1.586	0.049	2.395	0.216
	Soil conservation	6	2	6	38		1130.2	1412.2	8638.2	2945.7		1530862.0	27744.7	33727397.1	15644799.3		4	52	3334.1	19560970.7	0.208*	4.189	2.515	3.866	0.077
Fruit plantation	Climate regulation	134	260	736	953		826.2	902.8	834.7	1112.3		583875.2	758464.1	719311.9	1221087.5		4	2083	969.7	962685.9	0.018***	12.929	0.284	2.850	0.000
	Raw materials production	48	58	30			1044.1	1459.0	1670.7			1064994.5	2664468.7	3007908.8			3	136	1359.3	2236397.3	0.027	1.855	0.202	3.366	0.189
	Agricultural products supply	724	994	1149	1341	8955	1462.8	1734.5	1796.8	1955.7	5819.6	2329457.0	3594157.6	4084994.3	5266042.5	270558830.5	5	13163	4526.7	188924295.7	0.019***	63.288	0.001	2.373	0.000
	Soil conservation	8	11	99			816.4	561.6	1063.2			404232.7	96429.7	1500457.6			3	118	999.7	1318806.7	0.018	1.046	0.204	3.380	0.391
Rainfed cropland	Agricultural products supply	214	433	623	785	9970	859.6	1087.0	1378.6	1487.8	5269.8	649727.0	949694.8	2161671.6	2381358.9	98598828.2	5	12025	4592.2	84297288.3	0.027***	81.850	0.000	2.373	0.000
	Climate regulation	9	11	29			498.5	510.0	489.5			59369.9	93273.6	91247.5			3	49	495.7	85917.6	0.001	0.019	0.654	4.169	0.986
	Gas regulation	12	19	19			544.8	680.7	531.4			225824.3	173833.1	48241.5			3	50	591.3	143510.5	0.034	0.835	0.099	3.351	0.457
River	Climate regulation	39	146	241			32947.1	14715.3	16903.0			2176413104.7	1340764280.8	2207599317.3			3	426	17622.0	1932349172.4	0.013	2.737	0.315	3.473	0.095
	Biodiversity maintenance	195	149	14			63423.7	39823.2	3187.4			9487078290.9	3755334300.7	22267745.6			3	358	51245.5	6956789834.6	0.032**	5.944	0.039	3.080	0.003
	Water supply	39	41				58079.5	27624.2				4740421714.1	1212251206.0				2	80	42471.2	3163970003.0	0.073**	6.164	0.157	4.570	0.023
Pond	Climate regulation	191	263	584	487		347.9	525.1	508.3	561.8		90632.5	350331.8	478187.3	435321.4		4	1525	508.2	398095.8	0.011***	5.389	0.059	2.662	0.000
	Biodiversity maintenance	954	1442	729	57		1692.5	2279.5	1452.3	395.5		3609327.2	4436286.1	2279793.0	52912.7		4	3182	1880.3	3780040.8	0.043***	48.125	0.007	2.614	0.000
	Environmental purification	9	120	344			4762.9	6277.9	15908.0			6664890.8	15475719.5	211173901.4			3	473	13252.8	176475189.6	0.107***	28.088	0.073	3.124	0.000
	Water supply	31	90	43			1262.1	1910.3	1932.4			1496232.7	4731825.4	2820850.0			3	164	1793.5	3685081.0	0.018	1.466	0.069	3.156	0.245
Inland mudflat	Biodiversity maintenance	2	16	11	6	12	1909.7	18862.5	33575.3	6652.3	2654.3	2739338.2	542545483.0	1049959126.0	27088446.0	8332610.9	5	47	15887.5	576281203.2	0.243**	3.374	0.962	3.184	0.040
	Aesthetic landscape	3	3	5			3635.9	4457.1	48662.3			4152886.2	3358888.0	2795462692.7			3	11	24326.4	1766334640.4	0.279	1.551	0.583	5.701	0.346
Other grasslands	Biodiversity maintenance	2	18				148.0	2567.4				7.0	4616009.8				2	20	2325.4	4681217.3	0.113	2.283	0.096	4.833	0.166
	Soil conservation	35	18				5045.6	1629.2				37698284.0	1322754.4				2	53	3885.3	27961971.9	0.094**	5.267	0.093	4.402	0.032
Sparsely forested woodland	Raw materials production	212	236	240	217	115	13652.7	8664.3	8197.6	8267.4	9638.8	968725513.0	301668285.0	403894640.6	259954578.8	335659371.4	5	1020	9616.7	463779573.0	0.010**	2.462	0.067	2.421	0.047
	Climate regulation	393	236				8027.4	3356.9				181296248.4	48282219.4				2	629	6275.0	136503054.7	0.037***	24.402	0.038	4.000	0.000
	Soil conservation	1	217				31941.9	4230.5				0.0	33653003.8				2	218	4357.7	37005050.3	0.095	22.609	26.954	48.068	0.663
Other orchards	Raw materials production	13	11	4			988.1	960.0	860.2			580427.8	455719.3	171268.4			3	28	958.8	474771.1	0.004***	0.047	0.163	3.657	0.957
	Agricultural products supply	288	367	503	4765		1306.2	1240.0	1405.6	3244.9		1874367.5	2172436.8	2589249.2	54785122.3		4	5923	2870.2	45098462.6	0.013	25.646	0.009	2.614	0.000
	Climate regulation	55	154	294			794.2	805.4	995.2			299202.2	512853.9	987014.5			3	503	915.1	775665.1	0.012	2.944	0.144	3.227	0.065
	Soil conservation	4	8	59			720.7	687.7	970.3			366244.4	329840.3	973778.0			3	71	924.4	877398.5	0.012	0.408	0.318	3.611	0.706
Irrigated cropland	Raw materials production	54	73	41			569.3	542.9	614.0			164432.2	164250.5	203890.1			3	168	568.8	174773.5	0.005	0.375	0.158	3.288	0.708
	Agricultural products supply	2068	2711	3240	3755	18226	821.0	1044.4	1240.4	1472.7	3719.0	565149.5	1133300.1	1867741.3	3102822.0	45083291.3	5	30000	2728.7	29660832.9	0.052***	410.596	0.011	2.379	0.000
	Climate regulation	137	643	1537	532		536.3	579.2	508.8	451.2		143636.9	248845.3	151716.1	133031.0		4	2849	515.3	171494.5	0.010***	9.690	0.940	3.360	0.000
	Soil conservation	48	34	176			555.3	554.0	689.4			267740.9	274148.7	340052.2			3	258	646.6	321842.2	0.012	1.575	0.219	3.354	0.244
Paddy field	Agricultural products supply	957	1338	1763	2265	23677	1390.6	1706.3	1967.9	2186.2	4516.3	1450787.4	2066111.4	3289134.9	4103823.9	35809254.6	5	30000	3965.6	30055522.6	0.038***	298.904	0.047	2.400	0.000
	Climate regulation	237	546	1008	564		863.1	917.8	1003.2	893.2		439821.7	1246046.0	560244.3	578055.0		4	2355	942.9	714325.5	0.004**	3.232	0.166	2.751	0.027
Woodland	Raw materials production	55	83	155	183	178	6524.8	9584.2	6760.6	11593.7	37420.1	175554944.6	2214025977.7	199826276.7	846739898.9	3969146420.2	5	654	16796.1	1823011092.4	0.089***	15.898	0.297	2.559	0.000
	Climate regulation	1789	3311	2920	2567	2967	61454.1	64945.9	33779.0	18137.2	12741.3	80467257654.7	57434091405.1	11152431053.0	2205619560.2	1298775058.8	5	13554	37477.8	28223610586.8	0.017***	57.104	0.091	2.426	0.000
	Biodiversity maintenance	92	4	237	275	2	1381.1	1271.2	7023.4	7306.5	1517.1	4184446.8	419902.7	118777236.9	238187952.1	37314.1	5	610	6244.3	158708622.8	0.029***	4.461	0.053	2.418	0.000
	Soil conservation	24	20	603			12025.5	8908.4	3530.0			466990766.3	222260292.1	32470273.9			3	647	4011.4	57794954.4	0.058***	19.748	3.171	6.601	0.000

Note:  $N_h$  is the number of patches on land use map in  $h = 1, 2, \dots, L$  stratum of a certain function in one type of land use;  $\mu_h$  is the  $h$  stratum mean of the patch areas of a certain function in one type of land use;  $\sigma_h$  is the  $h$  stratum variance of the patch areas of a certain function in one type of land use;  $L, N$  are the stratum number, total number of patches of a certain function in one type of land use, respectively;  $\bar{Y}, \sigma^2$  are the population mean, variance of the patch areas of a certain function in one type of land use, respectively;  $F, P$ -value are the testing statistics of the noncentral  $F$ -distribution;  $\lambda$  is the value of the noncentral parameter;  $F_\alpha$  is the critical value at significant level  $\alpha$ . Superscript \*, \*\* and \*\*\* of  $q$ -value denote statistical significance at level of  $\alpha = 0.1, 0.05$  and  $0.001$ , respectively.

Table S3. The  $q$ -value hierarchical statistical information table in 2015

Land use type	Function	$N_1$	$N_2$	$N_3$	$N_4$	$N_5$	$\mu_1$	$\mu_2$	$\mu_3$	$\mu_4$	$\mu_5$	$\sigma_1$	$\sigma_2$	$\sigma_3$	$\sigma_4$	$\sigma_5$	$L$	$N$	$\bar{Y}$	$\sigma^2$	$q$ -value	$F$	$\lambda$	$F_\alpha$	$P$ -value
Tea plantation	Agricultural products supply	406	520	582	771	7667	1117.0	1255.0	1370.3	1381.3	3962.5	1317671.3	1925625.7	2398044.3	2210608.4	81773866.5	5	9946	3353.0	64754503.6	0.019***	48.996	0.002	2.374	0.000
	Climate regulation	110	238	134			692.4	962.2	771.8			343935.0	779337.8	431977.3			3	482	847.7	596976.5	0.023**	5.572	0.003	3.020	0.004
	Raw materials production	43	33	32			769.9	882.1	816.2			497593.9	523899.4	704742.3			3	108	817.9	569184.7	0.004	0.201	0.048	3.156	0.822
	Soil conservation	5	6	20			557.5	1266.2	723.0			263820.5	1967108.9	283252.5			3	31	801.5	661402.1	0.084	1.279	0.881	4.678	0.429
Canal and ditch	Climate regulation	3	46	4			7638.1	1920.1	2396.2			6854071.4	9809032.1	3555364.6			3	53	2279.7	10908301.3	0.159	4.740	4.546	8.425	0.237
	Biodiversity maintenance	17	26	1			2299.1	2074.7	194.1			5133850.9	4813142.2	0.0			3	44	2118.7	4925558.1	0.020	0.416	0.062	3.325	0.671
	Water supply	140	140	80			3279.6	5581.3	10534.8			26523258.7	51109535.1	309492672.8			3	360	5787.0	106437487.5	0.070***	13.475	0.402	3.598	0.000
Shrubbery land	Biodiversity maintenance	9	14	27			1496.9	8291.0	5230.4			1097351.0	59683383.5	29714509.2			3	50	5415.3	38052382.4	0.134*	3.635	0.519	3.030	0.063
	Soil conservation	23	26	27	35	52	9026.2	5760.1	2908.9	4410.9	3878.4	299598091.1	37617366.1	15328421.4	28430544.5	18881872.0	5	163	4858.7	66501958.6	0.054	2.234	0.514	2.730	0.099
Fruit plantation	Climate regulation	470	296	241	247		757.9	1119.5	1078.9	886.6		657523.2	1356696.0	861124.7	678272.9		4	1254	930.3	889975.5	0.027***	11.647	0.297	2.864	0.000
	Raw materials production	189	221	88			892.5	1052.0	1557.7			633977.4	1030940.2	2711984.8			3	498	1080.8	1231355.3	0.044***	11.356	0.568	3.810	0.000
	Agricultural products supply	647	897	1083	1302	8012	1336.0	1693.7	1851.7	1981.1	5859.2	1934599.5	3124072.9	4327780.3	5256453.6	282199447.2	5	11941	4514.9	194352565.6	0.019***	57.931	0.001	2.374	0.000
	Soil conservation	6	10	53			607.4	2315.9	992.5			64474.5	7419588.2	876678.1			3	69	1150.8	1995966.4	0.121	4.546	1.498	5.135	0.071
Rainfed cropland	Agricultural products supply	488	757	1030	1337	12858	776.7	994.5	1255.3	1359.8	4566.5	514549.0	1003772.3	1793869.5	2306166.6	81368508.1	5	16470	3822.7	65863679.8	0.030***	127.522	0.000	2.373	0.000
	Climate regulation	63	33	17			479.6	398.4	463.6			82705.6	58024.6	65884.0			3	113	453.4	74249.7	0.017	0.967	0.489	3.788	0.467
	Gas regulation	80	77	55			457.3	548.4	620.4			159884.7	166609.6	170883.9			3	212	532.7	169412.3	0.025	2.677	0.205	3.342	0.090
River	Climate regulation	138	140	38			9181.8	5488.7	19405.2			321038761.4	144865046.5	1054035512.5			3	316	8775.0	349578067.4	0.053***	8.718	0.630	3.905	0.000
	Biodiversity maintenance	132	82	1			12743.2	32826.7	226.1			1090094760.7	2182745064.6	0.0			3	215	20344.7	1598536067.9	0.061**	6.831	0.202	3.338	0.002
	Water supply	60	179	109			19183.2	90338.4	43267.3			775340014.7	9441576979.8	5366608774.6			3	348	63326.7	7508350707.4	0.112***	21.651	0.133	3.219	0.000
Pond	Climate regulation	156	475	408	321		395.3	513.3	476.4	380.3		106587.5	1034322.8	210254.8	88453.0		4	1360	457.3	460475.5	0.007**	3.007	0.026	2.634	0.030
	Biodiversity maintenance	67	1907	740	41		493.6	2616.8	1657.9	378.6		212777.2	13317392.3	6731595.4	46256.6		4	2755	2274.3	11346077.7	0.028***	26.087	0.000	2.608	0.000
	Environmental purification	29	90				15872.8	24361.3				173667799.5	448786217.8				2	119	22292.7	395021092.2	0.034**	4.070	0.008	3.954	0.047
	Water supply	84	395	373	225		1834.8	2984.9	4472.2	2770.3		8335051.0	9670216.5	36450809.6	8903561.1		4	1077	3365.5	19414977.9	0.038***	14.055	0.066	2.671	0.000
Inland mudflat	Biodiversity maintenance	2	24	22			1909.7	16103.2	5462.4			2739338.2	447467014.4	62806457.4			3	48	10634.8	283020142.0	0.107*	2.706	0.188	2.651	0.095
	Aesthetic landscape	2	8				9509.0	60602.1				12860075.5	2035833438.2				2	10	50383.5	2048919732.2	0.204	2.048	0.169	6.198	0.220
Other grasslands	Biodiversity maintenance	5	43	3			659.6	4476.7	1179.3			288580.8	31369687.6	109138.9			3	51	3908.5	28228848.9	0.062	1.582	0.024	3.229	0.220
	Soil conservation	5	5	5	6		2207.4	5503.6	1427.2	1060.1		4030942.8	9241587.9	287901.4	572046.0		4	21	2478.6	6426407.3	0.472**	5.069	2.033	3.974	0.049
Sparsely forested woodland	Raw materials production	316	555	284			7883.1	5728.3	5948.4			257619046.8	102810846.7	183621629.5			3	1155	6371.9	165903586.0	0.005*	3.029	0.050	2.365	0.052
	Climate regulation	340	360				14417.5	5057.9				968787160.8	66086329.8				2	700	9604.0	526423349.4	0.042***	30.273	0.088	4.190	0.000
	Soil conservation	1	2	87			6901.2	8977.6	6652.9			0.0	6466522.1	81404413.0			3	90	6707.4	78952450.3	0.001	0.065	1.246	4.780	0.965
Other orchards	Raw materials production	29	24	17			949.7	749.8	1089.4			575168.2	518114.9	728011.7			3	70	915.1	609966.6	0.028	0.974	0.216	3.464	0.420
	Agricultural products supply	226	346	499	3933		1296.4	1251.8	1413.8	3475.2		2216796.8	2242040.3	2776581.5	63569672.5		4	5004	3017.5	51266457.1	0.015***	25.431	0.005	2.611	0.000
	Climate regulation	151	152	51			842.5	963.3	881.5			808868.6	726997.6	341744.5			3	354	900.0	709594.0	0.004	0.789	0.164	3.264	0.484
	Soil conservation	6	3	29			1234.2	766.2	913.5			782989.2	390812.3	618053.2			3	38	952.5	642590.0	0.026	0.459	1.064	4.816	0.757
Irrigated cropland	Raw materials production	479	523	435	219		487.0	539.5	540.6	546.4		136392.3	191789.7	222542.6	227678.5		4	1656	525.5	189198.6	0.003	1.776	0.188	2.771	0.171
	Agricultural products supply	1941	2666	3336	3999	18058	799.4	1025.0	1194.3	1413.6	3727.1	510493.7	1125530.5	1958674.4	2823196.4	45163016.6	5	30000	2707.5	29503066.7	0.054***	427.362	0.013	2.380	0.000
	Climate regulation	74	994	401	227		432.8	497.7	486.4	531.7		129689.4	155155.9	139658.6	144906.4		4	1696	496.8	149376.4	0.002	1.391	0.936	3.361	0.369
	Soil conservation	36	33	108			543.6	486.6	663.1			240915.2	100475.1	349783.0			3	177	605.9	286598.7	0.019	1.683	0.087	3.178	0.202
Paddy field	Agricultural products supply	935	1312	1871	2438	23444	1248.5	1599.3	1851.7	2089.7	4521.6	1165863.1	1776713.9	2727370.2	3643463.7	35436213.3	5	30000	3927.6	29552207.2	0.043***	339.433	0.030	2.390	0.000
	Climate regulation	169	1418	622	307		789.6	838.9	852.5	873.8		331068.7	763421.8	515012.7	528837.7		4	2516	843.2	644684.6	0.001	0.440	0.578	3.086	0.778
Woodland	Raw materials production	98	137	209	363		3224.5	17701.1	4718.4	19887.2		18136979.2	26237660162.4	81169614.8	1822023374.5		4	807	13564.1	5351157594.2	0.010**	2.736	0.030	2.642	0.044
	Climate regulation	3046	3947	4189	2948	1453	24677.0	38775.0	30267.8	22622.9	23366.4	13928891591.6	34209698208.4	9737900909.5	3399586375.4	4546849702.8	5	15583	29240.0	15111314058.9	0.003***	10.047	0.007	2.377	0.000
	Biodiversity maintenance	28	268	284			1024.8	30203.5	161036.7			1289826.0	4825906738.2	479603941049.9			3	580	92858.0	241567617331.9	0.019**	5.473	0.037	3.067	0.005
	Soil conservation	15	23	762			11164.2	12220.0	4991.7			641462993.4	2226552226.0	390914727.6			3	800	5315.2	450498934.4	0.005	1.877	0.504	3.718	0.225

Note: “ $N_1, N_2, \dots, N_5, \mu_1, \mu_2, \dots, \mu_5, \sigma_1, \sigma_2, \dots, \sigma_5, L, N, \bar{Y}, \sigma^2, q$ -value,  $F, \lambda, F_\alpha, P$ -value” have the meanings stated in Table S2.

Table S4. The  $q$ -value hierarchical statistical information table in 2020

Land use type	Function	$N_1$	$N_2$	$N_3$	$N_4$	$N_5$	$\mu_1$	$\mu_2$	$\mu_3$	$\mu_4$	$\mu_5$	$\sigma_1$	$\sigma_2$	$\sigma_3$	$\sigma_4$	$\sigma_5$	$L$	$N$	$\bar{Y}$	$\sigma^2$	$q$ -value	$F$	$\lambda$	$F_\alpha$	$P$ -value
Tea plantation	Agricultural products supply	325	454	477	654	6590	1110.9	1301.4	1364.3	1446.6	4000.9	1455696.5	2108558.7	2135042.8	2431643.7	78789585.8	5	8500	3401.8	62802003.9	0.020***	42.838	0.003	2.375	0.000
	Climate regulation	62	133	174			751.7	841.0	907.6			450190.9	455240.6	580430.0			3	369	857.4	516589.6	0.006	1.128	0.064	3.117	0.336
	Raw materials production	99	38	8			901.2	1211.4	685.7			556207.0	2134088.0	110418.8			3	145	970.6	968083.7	0.024	1.725	0.435	3.691	0.247
	Soil conservation	7	9	26			468.4	998.5	800.6			42852.8	1741441.0	253649.2			3	42	787.6	563946.2	0.047	0.966	0.373	3.816	0.452
Canal and ditch	Climate regulation	21	67	52			2164.6	2525.4	3252.1			14315181.3	9253618.4	19493743.0			3	140	2741.2	13985427.7	0.012	0.838	0.056	3.147	0.444
	Biodiversity maintenance	43	26	6			3775.5	4807.0	2131.7			27424735.5	67845936.4	3573914.2			3	75	4001.6	40063257.3	0.013	0.486	0.058	3.214	0.625
	Water supply	90	119	23			4047.0	7489.7	15458.1			42331719.4	131170707.9	428126293.5			3	232	6944.1	136741866.5	0.077***	9.617	1.088	4.486	0.000
Shrubbery land	Biodiversity maintenance	4	27	9			1706.9	5778.4	5226.9			948935.0	35045829.8	42971777.8			3	40	5247.2	34863428.5	0.041	0.799	0.095	3.404	0.473
	Soil conservation	23	44	31	32	28	6382.9	4389.7	5461.7	4041.1	1856.3	70137277.7	18932423.7	28003382.2	23875548.9	2140294.8	5	158	4370.6	28156778.3	0.070**	2.870	0.502	2.726	0.041
Fruit plantation	Climate regulation	127	236	512	801		811.8	950.2	787.1	1107.5		570752.6	826966.7	709794.2	1155271.0		4	1676	1974.7	949836.5	0.022***	12.708	0.250	2.822	0.000
	Raw materials production	103	39	28			1152.6	1137.0	979.1			1446068.8	1089499.3	696089.6			3	170	1120.5	1244719.2	0.003	0.268	0.159	3.287	0.781
	Agricultural products supply	658	927	992	1188	7723	1461.9	1830.7	1798.1	2000.0	6026.4	2289001.1	3742653.5	4097122.9	5070569.3	304100406.5	5	11488	4644.9	209673534.2	0.019***	54.774	0.001	2.374	0.000
	Soil conservation	9	15	61			1386.4	1452.5	1196.5			926823.8	3360384.4	1892618.3			3	85	1261.7	2060499.3	0.005	0.223	0.562	3.923	0.845
Rainfed cropland	Agricultural products supply	779	1140	1457	1916	13498	793.4	940.7	1177.5	1336.0	4345.0	508376.6	1016857.8	1577760.5	2304314.1	78978101.0	5	18790	3438.8	59280908.9	0.036***	172.988	0.004	2.375	0.000
	Climate regulation	16	177	192			461.2	460.1	447.8			50255.5	102471.7	107118.6			3	385	454.0	102657.9	0.000	0.072	1.006	4.364	0.957
	Gas regulation	110	89	59			430.7	473.7	616.0			85964.2	114951.4	223362.1			3	258	487.9	132598.9	0.039**	5.220	0.452	3.678	0.014
River	Climate regulation	37	173	146			12383.1	6573.4	14237.0			516542355.6	117798369.7	1582239623.2			3	356	10320.2	773382349.8	0.018	3.149	0.112	3.187	0.052
	Biodiversity maintenance	170	91	16			45903.7	27479.8	3683.4			6553144648.5	1677123540.2	23507747.8			3	277	37412.3	4716484650.3	0.030**	4.264	0.023	3.064	0.016
	Water supply	15	56	148	81	42	10828.7	22134.5	55663.5	53720.6	39390.6	737889632.3	1125810404.4	6173483095.3	5604374509.2	3397947563.2	5	342	45748.3	4840263833.4	0.043**	3.771	0.090	2.452	0.006
Pond	Climate regulation	196	259	594	493		350.6	457.8	499.8	525.3		87519.7	133715.3	244938.7	259079.1		4	1542	481.9	213783.6	0.014***	7.333	0.057	2.660	0.000
	Biodiversity maintenance	907	1358	681	69		1644.5	2308.2	1418.8	470.1		3200551.7	4748439.1	2467639.3	143007.4		4	3015	1865.6	3854831.3	0.050***	52.785	0.013	2.619	0.000
	Environmental purification	9	124	356			1938.8	6090.9	15728.5			5172165.5	15134111.6	195011125.0			3	489	13030.8	165679433.5	0.119***	32.935	0.046	3.084	0.000
	Water supply	39	63	43			791.8	2125.2	1788.0			442639.7	4229198.0	3066218.0			3	145	1666.6	3167450.3	0.095***	7.472	0.184	3.335	0.000
Inland mudflat	Biodiversity maintenance	2	16	16	8	15	218.5	7682.0	28512.9	29687.9	2887.9	1308.1	85064377.2	1428166942.0	1476946408.4	7618877.7	5	57	15094.4	776892984.5	0.184*	2.928	0.964	2.535	0.063
	Aesthetic landscape	3	6				12247.8	32267.2				8073133.6	275116738.7				2	9	25594.1	275163761.9	0.324	3.350	0.271	7.059	0.145
Other grasslands	Biodiversity maintenance	9	1				3269.8	328.1				6569562.2	0.0				2	10	2975.6	6691458.1	0.116	1.054	0.078	5.729	0.350
	Soil conservation	25	24				5356.2	2804.1				49271242.0	7107635.7				2	49	4106.2	30247188.4	0.054	2.673	0.101	3.100	0.126
Sparsely forested woodland	Raw materials production	148	205	431	360	105	10441.2	6576.6	6280.2	5648.2	9367.7	378972436.3	137568306.1	176377104.8	100168414.8	300776327.3	5	1249	6899.3	185105266.0	0.014**	4.429	0.351	2.583	0.003
	Climate regulation	98	280	160			7566.0	11084.8	9422.3			415464438.2	915207445.3	168557277.5			3	538	9949.4	603912384.1	0.003	0.794	0.002	3.015	0.453
	Soil conservation	6	10	17			740.6	407.2	2165.7			564950.8	77417.4	4545975.5			3	33	1373.7	3147071.0	0.216**	4.127	0.324	3.833	0.040
Other orchards	Raw materials production	23	14	11			867.6	735.0	935.1			431537.9	120209.7	480921.5			3	48	844.4	357684.8	0.016	0.360	0.221	3.549	0.725
	Agricultural products supply	261	306	444	3610		1223.8	1248.2	1329.6	3010.9		1792885.6	2704993.4	1518.6	46501063.2		4	4621	2631.7	37343314.9	0.014***	21.477	0.008	2.614	0.000
	Climate regulation	44	133	259			817.6	764.2	969.9			367632.3	451131.8	904269.2			3	436	891.8	721032.2	0.013	2.782	0.208	3.322	0.081
	Soil conservation	4	3	30			609.5	334.4	821.4			49666.2	17178.7	481551.6			3	37	759.0	417400.1	0.048	0.864	0.207	3.606	0.465
Irrigated cropland	Raw materials production	419	209	75			500.4	615.3	724.5			168620.4	239750.0	355346.4			3	703	558.5	215600.5	0.027***	9.869	1.091	4.448	0.000
	Agricultural products supply	2030	2714	3250	3968	18038	788.4	1042.7	1222.2	1387.1	3633.5	488197.6	1163312.3	2110323.9	2577880.1	44761549.0	5	30000	2648.2	29103101.7	0.051***	402.232	0.011	2.379	0.000
	Climate regulation	159	625	1452	427		449.9	559.6	502.8	459.0		106746.9	234224.8	152285.4	129759.5		4	2663	505.9	166409.2	0.007***	6.566	0.617	3.116	0.000
	Soil conservation	35	43	128			576.1	564.5	603.1			301903.8	209648.4	287772.2			3	206	590.5	274140.9	0.001	0.102	0.262	3.426	0.914
Paddy field	Agricultural products supply	996	1337	1864	2393	23410	1295.1	1552.5	1879.9	2121.5	4514.2	1202127.2	1684223.8	3195565.9	3946233.9	36185979.9	5	30000	3920.8	30136141.2	0.042***	330.110	0.031	2.390	0.000
	Climate regulation	362	693	1091	1020		791.2	768.2	918.9	837.8		448285.2	459394.2	517823.0	540648.6		4	3166	845.2	507956.2	0.007***	7.354	0.131	2.720	0.000
Woodland	Raw materials production	10	42	90	246	269	1736.4	21098.8	2359.6	22208.9	25936.1	2429048.5	15674686078.1	8152968.8	1805829883.3	3513689142.3	5	657	20633.3	3181613064.6	0.020**	3.327	0.088	2.438	0.012
	Climate regulation	2605	4920	3990	3007	3296	35714.9	44600.8	28010.3	16506.4	12089.5	52953064314.5	39384176374.0	8743311165.6	2218641465.9	1166336644.0	5	17818	28831.3	21318027410.3	0.007***	32.240	0.027	2.389	0.000
	Biodiversity maintenance	99	30	6	64	312	634.4	797.9	870.1	3609.3	4782.0	451087.0	321425.8	289004.5	13762302.1	180714345.6	5	511	3551.7	115274589.6	0.027**	3.499	0.057	2.423	0.009
	Soil conservation	16	157				1820.4	2956.7				2614387.1	48125228.9				2	173	2851.6	44024504.6	0.002	0.422	0.016	3.958	0.520

Note: “ $N_1, N_2, \dots, N_5, \mu_1, \mu_2, \dots, \mu_5, \sigma_1, \sigma_2, \dots, \sigma_5, L, N, \bar{Y}, \sigma^2, q$ -value,  $F, \lambda, F_\alpha, P$ -value” have the meanings stated in Table S2.