

Supplementary Table 4: multicollinearity analyzes with climatic and environmental variables

South region of Brazil. Correlations (Statistic collinearity) Marked correlations are significant at $p < .05000$ N=85 (Casewise deletion of missing data)

Variables	Annual precipitation	Annual average temperature	Average maximum temperature	Average minimum temperature	Average humidity (%)	Natural Forest	Planted forest	Agriculture	Urban infrastructure
Annual precipitation	1.0000 p= ---	-.3885 p=.000	-.5989 p=.000	-.1062 p=.274	.5089 p=.000	.3935 p=.000	.3696 p=.000	-.3995 p=.000	.1382 p=.154
Annual average temperature	-.3885 p=.000	1.0000 p= ---	.6619 p=.000	.4779 p=.000	-.5336 p=.000	-.5287 p=.000	-.5952 p=.000	.3778 p=.000	-.0624 p=.521
Average maximum temperature	-.5989 p=.000	.6619 p=.000	1.0000 p= ---	.3409 p=.000	-.7076 p=.000	-.4664 p=.000	-.5642 p=.000	.4421 p=.000	-.0712 p=.464
Average minimum temperature	-.1062 p=.274	.4779 p=.000	.3409 p=.000	1.0000 p= ---	.0982 p=.312	-.4188 p=.000	-.4853 p=.000	-.0735 p=.450	.3667 p=.000
Average humidity (%)	.5089 p=.000	-.5336 p=.000	-.7076 p=.000	.0982 p=.312	1.0000 p= ---	.3471 p=.000	.5055 p=.000	-.5866 p=.000	.4262 p=.000
Natural Forest	.3935 p=.000	-.5287 p=.000	-.4664 p=.000	-.4188 p=.000	.3471 p=.000	1.0000 p= ---	.7420 p=0.00	.0250 p=.797	.4134 p=.000
Planted forest	.3696 p=.000	-.5952 p=.000	-.5642 p=.000	-.4853 p=.000	.5055 p=.000	.7420 p=0.00	1.0000 p= ---	-.2383 p=.013	.1413 p=.145
Agriculture	-.3995 p=.000	.3778 p=.000	.4421 p=.000	-.0735 p=.450	-.5866 p=.000	.0250 p=.797	-.2383 p=.013	1.0000 p= ---	-.0666 p=.493
Urban infrastructure	.1382 p=.154	-.0624 p=.521	-.0712 p=.464	.3667 p=.000	.4262 p=.000	.4134 p=.000	.1413 p=.145	-.0666 p=.493	1.0000 p= ---

State of Paraná (PR). Correlations (PR STATISTIC collinearity) Marked correlations are significant at $p < .05000$ N=40 (Casewise deletion of missing data)

Variables	Annual precipitation	Annual average temperature	Average maximum temperature	Average minimum temperature	Average humidity (%)	Natural forest	Planted forest	Agriculture	Urban infrastructure
Annual precipitation	1.0000 p= ---	-.5552 p=.000	-.7072 p=.000	-.2652 p=.063	.7178 p=.000	.4895 p=.000	.4473 p=.001	-.2520 p=.077	.1129 p=.435
Annual average temperature	-.5552 p=.000	1.0000 p= ---	.6550 p=.000	.7639 p=.000	-.5580 p=.000	-.6744 p=.000	-.7800 p=.000	.5023 p=.000	.1618 p=.261
Average maximum temperature	-.7072 p=.000	.6550 p=.000	1.0000 p= ---	.4624 p=.001	-.5166 p=.000	-.4891 p=.000	-.5302 p=.000	.4619 p=.001	.1854 p=.198
Average minimum temperature	-.2652 p=.063	.7639 p=.000	.4624 p=.001	1.0000 p= ---	-.1800 p=.211	-.3893 p=.005	-.6600 p=.000	.4863 p=.000	.4210 p=.002
Average humidity (%)	.7178 p=.000	-.5580 p=.000	-.5166 p=.000	-.1800 p=.211	1.0000 p= ---	.6214 p=.000	.6529 p=.000	-.4212 p=.002	.3445 p=.014
Natural Forest	.4895 p=.000	-.6744 p=.000	-.4891 p=.000	-.3893 p=.005	.6214 p=.000	1.0000 p= ---	.8061 p=.000	-.3352 p=.017	.3369 p=.017
Planted forest	.4473 p=.001	-.7800 p=.000	-.5302 p=.000	-.6600 p=.000	.6529 p=.000	.8061 p=.000	1.0000 p= ---	-.4194 p=.002	.0208 p=.886
Agriculture	-.2520 p=.077	.5023 p=.000	.4619 p=.001	.4863 p=.000	-.4212 p=.002	-.3352 p=.017	-.4194 p=.002	1.0000 p= ---	.0211 p=.884
Urban infrastructure	.1129 p=.435	.1618 p=.261	.1854 p=.198	.4210 p=.002	.3445 p=.014	.3369 p=.017	.0208 p=.886	.0211 p=.884	1.0000 p= ---

State of Santa Catarina (SC). Correlations (SC STATISTIC collinearity) Marked correlations are significant at $p < .05000$ N=15 (Casewise deletion of missing data)

	Annual precipitation	Annual average temperature	Average maximum temperature	Average minimum temperature	Average humidity (%)	Natural forest	Planted forest	Agriculture	Urban infrastructure
Annual precipitation	1.0000 p= ---	.0343 p=.877	.0913 p=.679	-.1205 p=.584	.0538 p=.807	.2100 p=.336	.0661 p=.764	-.3664 p=.086	.1086 p=.622
Annual average temperature	.0343 p=.877	1.0000 p= ---	.2753 p=.204	.4808 p=.020	.2004 p=.359	-.1164 p=.597	-.3086 p=.152	.1174 p=.594	.5572 p=.006
Average maximum temperature	.0913 p=.679	.2753 p=.204	1.0000 p= ---	-.0198 p=.928	-.5052 p=.014	.5420 p=.008	.2833 p=.190	.3649 p=.087	.4926 p=.017
Average minimum temperature	-.1205 p=.584	.4808 p=.020	-.0198 p=.928	1.0000 p= ---	.7472 p=.000	-.7041 p=.000	-.8862 p=.000	-.2091 p=.338	.7526 p=.000
Average humidity (%)	.0538 p=.807	.2004 p=.359	-.5052 p=.014	.7472 p=.000	1.0000 p= ---	-.7672 p=.000	-.7940 p=.000	-.5341 p=.009	.3270 p=.128
Natural forest	.2100 p=.336	-.1164 p=.597	.5420 p=.008	-.7041 p=.000	-.7672 p=.000	1.0000 p= ---	.9124 p=.000	.5955 p=.003	-.1683 p=.443
Planted forest	.0661 p=.764	-.3086 p=.152	.2833 p=.190	-.8862 p=.000	-.7940 p=.000	.9124 p=.000	1.0000 p= ---	.5627 p=.005	-.5273 p=.010
Agriculture	-.3664 p=.086	.1174 p=.594	.3649 p=.087	-.2091 p=.338	-.5341 p=.009	.5955 p=.003	.5627 p=.005	1.0000 p= ---	-.0337 p=.879
Urban infrastructure	.1086 p=.622	.5572 p=.006	.4926 p=.017	.7526 p=.000	.3270 p=.128	-.1683 p=.443	-.5273 p=.010	-.0337 p=.879	1.0000 p= ---

Correlations: State of Rio Grande do Sul (RS). Correlations (RS STATISTIC collinearity). Marked correlations are significant at $p < .05000$ N=28 (Casewise deletion of missing data)

	Annual precipitation	Annual average temperature	Average Maximum temperature	Average minimum temperature	Average humidity (%)	Natural forest	Planted forest	Agriculture	Urban infrastructure
Annual precipitation	1.0000 p= ---	-.0487 p=.781	-.3499 p=.039	.0821 p=.639	.1917 p=.270	.1469 p=.400	-.0145 p=.934	-.1525 p=.382	-.0632 p=.718
Annual average temperature	-.0487 p=.781	1.0000 p= ---	.5213 p=.001	.1730 p=.320	-.4358 p=.009	-.2954 p=.085	-.3383 p=.047	.4092 p=.015	-.1567 p=.369
Average maximum temperature	-.3499 p=.039	.5213 p=.001	1.0000 p= ---	-.1016 p=.561	-.8496 p=.000	-.2662 p=.122	-.7447 p=.000	.6108 p=.000	-.2139 p=.217
Average minimum temperature	.0821 p=.639	.1730 p=.320	-.1016 p=.561	1.0000 p= ---	.4295 p=.010	.1938 p=.265	.0932 p=.594	.0457 p=.794	.6281 p=.000
Average humidity (%)	.1917 p=.270	-.4358 p=.009	-.8496 p=.000	.4295 p=.010	1.0000 p= ---	.2387 p=.167	.7682 p=.000	-.6732 p=.000	.4279 p=.010
Natural Forest	.1469 p=.400	-.2954 p=.085	-.2662 p=.122	.1938 p=.265	.2387 p=.167	1.0000 p= ---	.3764 p=.026	.3193 p=.062	.7502 p=.000
Planted forest	-.0145 p=.934	-.3383 p=.047	-.7447 p=.000	.0932 p=.594	.7682 p=.000	.3764 p=.026	1.0000 p= ---	-.4681 p=.005	.4330 p=.009
Agriculture	-.1525 p=.382	.4092 p=.015	.6108 p=.000	.0457 p=.794	-.6732 p=.000	.3193 p=.062	-.4681 p=.005	1.0000 p= ---	.0675 p=.700
Urban infrastructure	-.0632 p=.718	-.1567 p=.369	-.2139 p=.217	.6281 p=.000	.4279 p=.010	.7502 p=.000	.4330 p=.009	.0675 p=.700	1.0000 p= ---