

**Table S1.** Correlation coefficients per land cover class and transition. Correlations for S50E are presented above the diagonal in italics, and correlations for T35B are presented below the diagonal. \*p < 0.05.

	UG				FB				CL				FP				UB			
	T35B: n=1516 S50E: n=1249				T35B: n=45 S50E: n=136				T35B: n=92 S50E: n=323				T35B: n=123 S50E: n=42				T35B: n=3 S50E: n=103			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1.PSA	-	-0.24	-0.08	0.09	-	-0.10	-0.02	0.14	-	-0.37	-0.30	-0.20	-	-0.18	-0.06	0.03	-	-0.30	-0.52*	-0.35
2.NPP	-0.01	-	0.00	-0.04	0.02	-	-0.33	-0.07	-0.12	-	-0.09	-0.13	0.30	-	0.70*	0.55*	-0.42	-	-0.06	-0.10
3.NDVI	-0.20	0.33	-	0.86*	-0.09	0.41	-	0.90*	-0.58*	0.26	-	0.88*	-0.62*	0.18	-	0.92*	-0.45	0.27	-	0.86*
4.ET	0.11	0.19	0.84*	-	0.13	0.27	0.83*	-	-0.34	0.15	0.87*	-	-0.39	0.13	0.90*	-	-0.17	0.14	0.79*	-
	If				A				De				Re				Dn			
	T35B: n=54 S50E: n=101				T35B: n=28 S50E: n=39				T35B: n=3 S50E: n=3				T35B: n=108 S50E: n=70				T35B: n=60 S50E: n=15			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1.PSA	-	-0.40	-0.07	0.11	-	-0.23	-0.19	-0.15	-	-0.13	-0.45	-0.35	-	-0.32	-0.17	-0.01	-	-0.01	-0.37	-0.34
2.NPP	0.04	-	0.17	0.10	0.14	-	-0.18	-0.13	-0.28	-	0.14	-0.05	0.14	-	-0.08	-0.07	0.66*	-	-0.07	-0.19
3.NDVI	-0.03	0.41	-	0.88*	-0.37	0.24	-	0.91*	-0.36	0.32	-	0.81*	-0.22	0.34	-	0.90*	-0.38	-0.32	-	0.82*
4.ET	0.29	0.31	0.84*	-	-0.25	0.17	0.88*	-	-0.21	0.13	0.84*	-	-0.05	0.21	0.83*	-	-0.20	-0.19	0.89*	-
	Ia				Iu				R				D							
	T35B: n=41 S50E: n=117				T35B: n=2 S50E: n=120				T35B: n=60 S50E: n=6				T35B: n=23 S50E: n=35							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
1.PSA	-	-0.32	-0.45	-0.29	-	-0.28	-0.40	-0.22	-	-0.56*	0.11	-0.01	-	-0.75*	-0.81*	-0.67*				
2.NPP	-0.14	-	-0.08	-0.15	-0.38	-	-0.07	-0.11	0.63*	-	-0.20	-0.04	0.70*	-	0.86*	0.75*				
3.NDVI	-0.54*	0.22	-	0.87*	-0.63*	0.19	-	0.87*	-0.61*	-0.38	-	0.90*	-0.63*	-0.55*	-	0.93*				
4.ET	-0.29	0.11	0.87*	-	-0.29	0.05	0.81*	-	-0.29	-0.29	0.86*	-	-0.31	-0.42	0.87*	-				

UG-grasslands, FB-shrublands, CL-croplands, FP-forest/plantation, UB-urban,

If-woody encroachment, A-abandonment, De-degradation Re- reclamation, Dn-natural dynamics,

Ia-increased cultivation, Iu-increased urban, R-afforestation, D-deforestation

**Table S2.** Total and significant change in PSA per catchment T35B, reported in percentage and PSA change (highlighted in light grey).

Study area	Total area			Significant change				Negative sig. change				Positive sig. change					
	%			PSA change		%		PSA change		%		PSA change		%		PSA change	
	LC	MOD	LS	MOD	LS	MOD	LS	MOD	LS	MOD	LS	MOD	LS	MOD	LS	MOD	LS
<b>T35B</b>				-0.001	0.003	11.1	11.3	-0.013	0.004	7.9	4.3	-0.026	-0.039	3.2	7.0	0.019	0.031
T35B Persistent	<b>UG</b>	70.4	69.3	0.000	0.005	4.0	5.3	0.000	0.017	2.1	0.7	-0.017	-0.023	1.9	4.6	0.018	0.023
	<b>FB</b>	2.1	1.7	-0.001	0.001		0.1		0.012		0.0		-0.029		0.1		0.030
	<b>CL</b>	4.3	4.5	0.003	0.009	0.5	0.9	-0.001	0.029	0.2	0.2	-0.029	-0.038	0.3	0.7	0.023	0.045
	<b>FP</b>	5.7	5.4	-0.015	-0.012	2.5	2.2	-0.031	-0.038	2.5	2.1	-0.031	-0.039		0.1		0.020
	<b>UB</b>	0.1	0.1	-0.005	0.011	0.0	0.0	-0.024	0.030	0.0	0.0	-0.024	-0.020		0.0		0.039
	<b>P</b>	82.7	81.0	-0.001	0.004	7.4	8.4	-0.011	0.007	5.0	2.8	-0.025	-0.039	2.4	5.6	0.018	0.030
T35B Transition	<b>If</b>	2.5	2.3	-0.002	-0.003	0.2	0.1	-0.006	-0.003	0.1	0.1	-0.022	-0.030	0.1	0.1	0.018	0.029
	<b>A</b>	1.3	1.3	0.002	0.009	0.1	0.2	-0.008	0.022	0.0	0.0	-0.028	-0.033	0.0	0.2	0.012	0.031
	<b>De</b>	0.1	0.1	-0.003	0.005		0.0		0.022		0.0		-0.022		0.0		0.031
	<b>Re</b>	5.0	6.0	0.000	0.004	0.3	0.4	-0.009	0.023	0.2	0.1	-0.022	-0.025	0.1	0.4	0.023	0.031
	<b>Ia</b>	1.9	1.7	0.005	0.012	0.0	0.4	0.023	0.033		0.1		-0.031	0.3	0.3	0.023	0.045
	<b>Iu</b>	0.1	0.1	-0.004	0.012		0.0		0.029		0.0		-0.030		0.0		0.038
	<b>R</b>	2.8	2.8	-0.014	-0.013	1.0	1.0	-0.029	-0.034	1.0	0.9	-0.029	-0.038		0.1		0.020
	<b>D</b>	1.1	0.9	-0.019	-0.008	0.6	0.2	-0.031	-0.021	0.6	0.2	-0.031	-0.032		0.0		0.022
	<b>Dn</b>	2.8	2.4	-0.005	0.003	0.8	0.3	-0.021	0.008	0.7	0.1	-0.027	-0.034	0.1	0.3	0.024	0.025
<b>T</b>	17.6	17.8	-0.004	0.001	3.4	2.8	-0.017	-0.002	2.7	1.4	-0.027	-0.040	0.7	1.4	0.023	0.036	

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Ia-increased cultivation, Iu-increased urban, R-afforestation, D-deforestation

Dn-natural dynamics

**Table S3.** Total and significant change in PSA per catchment S50E, reported in percentage and PSA change (highlighted in light grey).

Study area	Total catchment			Significant change		Negative sig. change		Positive sig. change									
	%		PSA change		%		PSA change		%		PSA change						
	LC	MOD	LS	MOD	LS	MOD	LS	MOD	LS	MOD	LS	MOD	LS	MOD	LS	MOD	LS
<b>S50E</b>				0.004	0.004	8.5	16.1	0.016	0.017	1.9	4.1	-0.018	-0.026	6.6	12.0	0.026	0.032
S50E Persistent	<b>UG</b>	50.8	50.2	0.004	0.004	3.1	6.3	0.017	0.016	0.6	1.0	-0.012	-0.023	2.5	5.3	0.024	0.023
	<b>FB</b>	6.4	6.6	-0.002	-0.006	0.7	1.5	-0.023	-0.018	0.5	1.3	-0.032	-0.026	0.1	0.2	0.013	0.027
	<b>CL</b>	15.3	15.6	0.005	0.008	1.3	2.4	0.018	0.028	0.2	0.3	-0.012	-0.028	1.1	2.2	0.024	0.034
	<b>FP</b>	2.0	1.8	-0.004	-0.006	0.3	0.6	-0.013	-0.019	0.3	0.5	-0.017	-0.034	0.0	0.1	0.018	0.044
	<b>UB</b>	4.9	4.7	0.007	0.008	0.3	0.7	0.015	0.023	0.0	0.1	-0.016	-0.022	0.2	0.6	0.020	0.027
<b>P</b>	87.7	85.5	0.004	0.004	5.4	10.9	0.013	0.013	1.3	2.9	-0.023	-0.027	4.1	8.0	0.025	0.027	
S50E Transition	<b>If</b>	4.8	5.3	0.005	0.006	0.9	1.3	0.012	0.016	0.4	0.6	-0.023	-0.028	0.5	0.8	0.038	0.050
	<b>A</b>	1.8	1.8	0.005	0.006	0.0	0.3	0.002	0.021		0.1		-0.026	0.0	0.2	0.002	0.031
	<b>De</b>	0.1	0.1	-0.003	0.000		0.0		0.009		0.0		-0.031		0.0		0.037
	<b>Re</b>	3.3	3.5	0.003	0.003	0.2	0.5	0.012	0.008	0.0	0.2	-0.003	-0.024	0.1	0.3	0.017	0.034
	<b>Ia</b>	5.5	4.8	0.005	0.010	0.2	0.9	0.009	0.029	0.1	0.1	-0.017	-0.029	0.1	0.8	0.027	0.033
	<b>Iu</b>	5.7	5.9	0.006	0.005	0.4	0.8	0.021	0.015	0.0	0.2	-0.008	-0.027	0.4	0.7	0.024	0.026
	<b>R</b>	0.3	0.2	0.004	0.001		0.0		0.002		0.0		-0.026		0.0		0.036
	<b>D</b>	1.7	1.5	0.032	0.056	0.8	0.9	0.038	0.068		0.0		-0.026	0.8	0.9	0.038	0.070
	<b>Dn</b>	0.7	0.6	-0.001	-0.001		0.1		0.002		0.0		-0.035	0.0	0.0		0.027
<b>T</b>	24.0	23.8	0.007	0.009	3.0	5.0	0.023	0.029	0.5	1.1	-0.020	-0.027	2.5	3.9	0.032	0.045	

