

Table S1. Landsat Land-use/cover classification accuracies by district and year.

District	Accuracy	1989	1996	2001	2006	2011	2016
Kanchanpur	Overall accuracy	81.63	82.04	80.41	83.27	84.90	85.71
Kailali	Overall accuracy	82.04	82.86	81.63	85.71	85.71	85.31
Bardiya	Overall accuracy	82.86	83.67	84.08	85.31	86.94	86.53
Banke	Overall accuracy	83.81	82.38	84.29	85.24	86.19	86.87
Dang	Overall accuracy	81.90	82.38	83.81	86.19	85.71	86.67
Kapilbastu	Overall accuracy	81.63	82.45	84.90	84.90	86.94	85.71
Rupandehi	Overall accuracy	83.81	84.29	85.24	83.33	84.76	86.19
Nawalparasi	Overall accuracy	80.41	82.04	84.90	83.67	84.49	85.71
Chitwan	Overall accuracy	81.43	82.38	85.24	84.29	85.71	86.67

Table S2. The absolute and relative areas of land-use/cover classes in western Tarai by year (km²).

LULC Classes	1989	(%)	1996	(%)	2001	(%)	2006	(%)	2011	(%)	2016	(%)
Urban/built-up	71	0.37	83	0.43	115	0.60	160	0.83	279	1.46	327	1.70
Cultivated land	7411	38.61	7478	38.96	7424	38.68	7327	38.18	7212	37.57	7162	37.31
Vegetation cover	10,459	54.49	10,414	54.26	10,403	54.20	10,428	54.33	10,448	54.43	10,472	54.56
Barren land	90	0.47	76	0.40	83	0.43	84	0.44	87	0.46	60	0.31
Sand cover	849	4.43	843	4.40	897	4.67	911	4.75	880	4.59	898	4.68
Water body	312	1.63	297	1.55	269	1.41	282	1.47	286	1.49	273	1.43
Total	19,194	100	19,194	100	19,194	100	19,194	100	19,194	100	19,194	100

Note: U/B (urban /built-up), CL (cultivated land), VC (vegetation cover), BL (barren land), SC (sand cover), WB (water body). Source : Rimal et al. 2018 [25]

Table S3. Land-use/cover class transition probability matrix calculated using pairs of Landsat classifications for 1996–2006, 2006–2016, and 1996–2016.

Transition Period	Initial LULC Class	Resultant LULC Class					
		Urban/Built-up	Cultivated	Vegetation	Barren land	Sand	Water
1996–2006	Urban/built-up	0.8634	0.0936	0.0230	0.0000	0.0178	0.0024
	Cultivated	0.0326	0.8658	0.0576	0.0006	0.0345	0.0089
	Vegetation	0.0060	0.0657	0.8872	0.0076	0.0269	0.0067
	Barren land	0.0000	0.0029	0.0694	0.8823	0.0410	0.0043
	Sand	0.0049	0.0680	0.0565	0.0024	0.7652	0.1031
	Water	0.0059	0.0258	0.0390	0.0032	0.4626	0.5138
2006–2016	Urban/built-up	0.8654	0.1049	0.0120	0.0009	0.0138	0.0030
	Cultivated	0.0626	0.8616	0.0531	0.0011	0.0147	0.0070
	Vegetation	0.0140	0.0585	0.8855	0.0058	0.0287	0.0076

	Barren land	0.0002	0.0099	0.4351	0.4878	0.0602	0.0067
	Sand	0.0146	0.0782	0.0827	0.0020	0.7266	0.0959
	Water	0.0086	0.0422	0.0235	0.0006	0.3473	0.5778
1996–2016	Urban/built-up	0.8683	0.0949	0.0176	0.0017	0.0149	0.0026
	Cultivated	0.0673	0.8406	0.0615	0.0012	0.0213	0.0082
	Vegetation	0.0143	0.0636	0.8805	0.0059	0.0299	0.0058
	Barren land	0.0002	0.0076	0.4113	0.5146	0.0593	0.0071
	Sand	0.0140	0.0746	0.0918	0.0021	0.6959	0.1217
	Water	0.0131	0.0387	0.0369	0.0010	0.4426	0.4676