

## Supplementary information

Table S1. List of the satellite imageries used in this study.

Landsat sensor name	Path/Row	Acquisition date	Spatial Resolution (m)	Used bands
TM4-5	135/46, 136/44, 136/45	February 1988	30	1-5,7
TM4-5		February 1998	30	1-5,7
TM4-5		February 2008	30	1-5,7
8 OLI and TIRS		February 2018	30	1-7,9

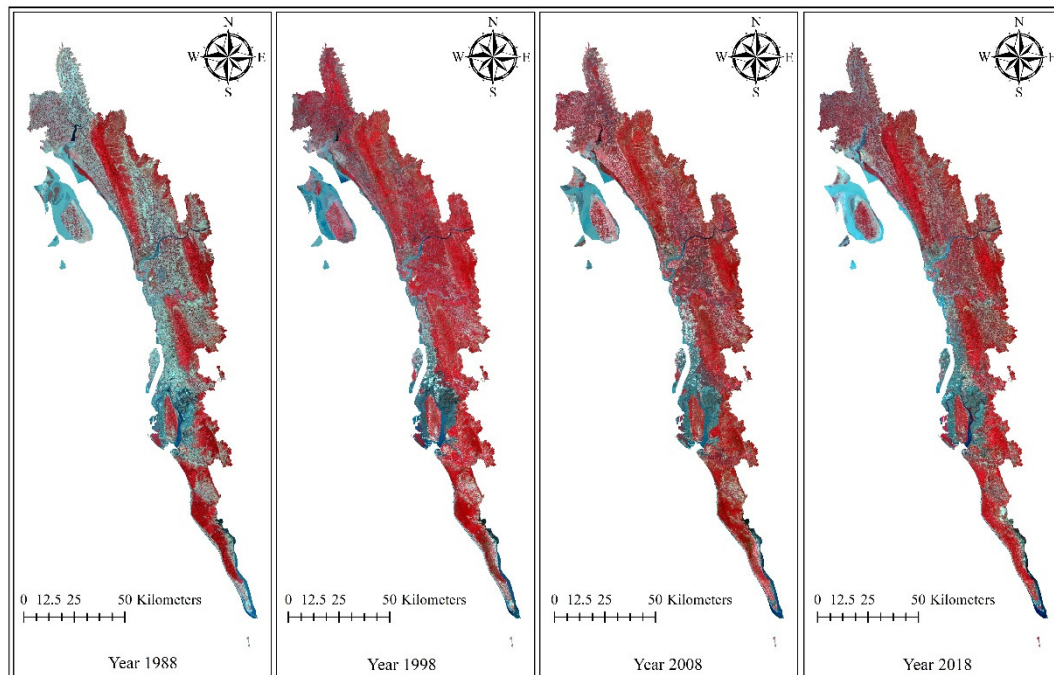


Figure S1. Multiband Landsat image of eastern coastal zone of Bangladesh.

Table S2. Classification accuracy of different land classes for 1988, 1998, 2008, and 2018.

LULC class	1988			1998			2008			2018		
	Producer' s	User' s	Kappa	Producer' s	User' s	Kappa	Producer' s	User' s	Kappa	Producer' s	User' s	Kappa
Agricultural land	0.99	0.94	0.95	0.96	0.96	0.96	0.96	0.83	0.83	0.99	0.97	0.97
Tree outside of forest	0.95	0.71	0.70	0.91	0.71	0.71	0.67	0.69	0.69	0.99	0.97	0.97
Mangrove	0.97	0.98	0.99	0.94	0.94	0.94	0.74	0.41	0.41	0.98	0.99	0.99
Mudflat	0.91	0.88	0.87	0.99	0.99	0.99	0.92	0.93	0.93	0.98	0.99	0.99
Built-up	0.92	0.97	0.98	0.98	0.94	0.94	0.99	0.97	0.97	0.99	0.97	0.97
Waterbody	0.98	0.99	0.99	0.99	0.99	0.99	0.98	0.97	0.96	0.99	1	1
Saltpan-shrimp	0.97	0.76	0.76	0.98	0.98	0.98	0.87	0.91	0.89	1	0.97	0.97
Hill vegetation	0.98	0.99	0.98	0.99	0.99	0.99	0.95	0.99	0.98	0.99	0.99	0.99
Overall accuracy			0.98			0.99			0.94			0.99
Overall kappa			0.97			0.99			0.91			0.99

Table S3. LULC transition matrix.

1988-1998 (ha)	Agriculture	TOF	Mangrove	Mudflat	Built-up	Waterbody	Saltpan-shrimp	Hill vegetation	Loss	Net change
Agriculture	337847.22	60747.66	808.83	2821.95	1235.88	6531.75	7988.58	28881	109015.65	-26960
TOF	36653.58	34610.85	32.76	9.63	599.94	402.21	60.75	2952.63	40711.5	37608
Mangrove	1810.98	15.84	4096.17	880.65	0	1300.5	175.5	3.24	4186.71	-1496
Mudflat	4125.69	11.97	1422	8817.84	5.58	10039.05	1003.77	0	16608.06	-5976
Built-up	423.54	62.46	0	9.99	1528.11	5.4	0.18	2.7	504.27	1377
Waterbody	7771.14	709.02	398.79	6824.25	37.89	38458.71	2273.13	97.83	18112.05	1629
Saltpan-shrimp	2295.09	57.87	23.49	75.87	0	1378.35	13121.64	4.41	3835.08	7668
Hill vegetation	28975.86	16714.98	4.5	9.99	1.53	83.97	0.81	119126.88	45791.64	-13850
Gain	82055.88	78319.8	2690.37	10632.3	1880.82	19741.23	11502.72	31941.81		
<b>1998-2008 (ha)</b>										
Agriculture	290198.16	88155.54	1412.19	2535.93	2717.91	4543.02	9568.44	20771.91	129704.94	-43216.38
TOF	43281.54	57027.15	6.84	26.46	727.2	295.83	59.13	11506.5	55903.5	47564.73
Mangrove	1107.45	33.39	4068.54	579.42	0	680.85	314.37	2.52	2718	1084.95
Mudflat	6035.85	217.53	1215.9	8297.28	32.13	3327.3	323.91	0.27	11152.89	1865.79
Built-up	320.94	184.32	0	6.57	2886.66	9.72	0.72	0	522.27	3013.74
Waterbody	4807.8	510.84	1149.48	9784.53	41.22	38208.87	3651.21	45.99	19991.07	-10538.64
Saltpan-shrimp	2074.77	57.15	18.18	79.02	0.54	557.46	21837.24	0	2787.12	11130.93
Hill vegetation	28860.21	14309.46	0.36	6.75	17.01	38.25	0.27	107836.38	43232.31	-10905.12
Gain	86488.56	103468.23	3802.95	13018.68	3536.01	9452.43	13918.05	32327.19		
<b>2008-2018 (ha)</b>										
Agriculture	243620.82	89108.01	1187.37	2427.93	4598.28	4877.55	8782.02	22084.83	133065.99	-58409.82
TOF	47947.32	102135.42	33.03	159.03	2455.74	619.47	460.98	6684.39	58359.96	60219.72
Mangrove	1270.44	119.88	5460.48	358.65	0	534.33	127.71	0	2411.01	635.31
Mudflat	3599.82	93.96	369.36	8867.7	90.63	8130.33	160.38	3.78	12448.26	-4082.58
Built-up	601.83	370.62	0	6.03	5397.66	37.08	1.17	8.28	1025.01	7128.45
Waterbody	3959.55	521.64	1223.19	5303.97	123.75	34598.07	1897.2	33.93	13063.23	2717.28
Saltpan-shrimp	5858.19	122.4	232.65	109.62	6.03	1496.7	27929.7	0	7825.59	3607.74
Hill vegetation	11419.02	28243.17	0.72	0.45	879.03	85.05	3.87	99532.26	40631.31	-11816.1
Gain	74656.17	118579.68	3046.32	8365.68	8153.46	15780.51	11433.33	28815.21		