

Supplementary Information

Spatial Evolution of Coastal Tourist City Using the Dyna-CLUE Model in Koh Chang of Thailand during 1990–2050

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Table S1. Confusion matrix of land-use classification in 1990

Reference map	Classified map						Error of Omission	Producer's Accuracy (%)
	F	A	U	R	M	Total		
F	172	0	15	5	25	217	20.74	79.26
A	28	165	12	10	14	229	27.95	72.05
U	11	10	162	15	19	217	25.35	74.65
R	9	8	17	180	18	232	22.41	77.59
M	5	4	5	8	190	212	10.38	89.62
Total	225	187	211	218	266	1107		
Error of Commission	23.56	11.76	23.22	17.43	28.57			
Consumer's Accuracy (%)	76.44	88.24	76.78	82.57	71.43			
Overall Accuracy	78.5							
Kappa coefficient	0.74							

¹ F = Forest land, A = Agricultural land, U = Urban and built-up land, R = Recreation area, and M = Miscellaneous land

Table S2. Confusion matrix of land-use classification in 2005

Reference map	Classified map						Error of Omission	Producer's Accuracy (%)
	F	A	U	R	M	Total		
F	186	15	9	10	10	230	19.13	80.87
A	10	181	5	6	10	212	14.62	85.38
U	15	1	186	15	24	241	22.82	77.18
R	6	6	12	175	8	207	15.46	84.54
M	10	20	8	7	185	230	19.57	80.43
Total	227	223	220	213	237	1120		
Error of Commission	18.06	18.83	15.45	17.84	21.94			
Consumer's Accuracy (%)	81.94	81.17	84.55	82.16	78.06			
Overall Accuracy	81.5							
Kappa coefficient	0.77							

¹ F = Forest land, A = Agricultural land, U = Urban and built-up land, R = Recreation area, and M = Miscellaneous land

Table S3. Confusion matrix of land-use classification in 2020

Reference map	Classified map						Error of Omission	Producer's Accuracy (%)
	F	A	U	R	M	Total		
F	205	1	4	13	5	228	10.09	89.91
A	14	211	7	10	8	250	15.60	84.40
U	6	16	224	1	5	252	11.11	88.89
R	18	3	13	213	11	258	17.44	82.56
M	9	5	1	6	215	236	8.90	91.10
Total	252	236	249	243	244	1224		
Error of Commission	18.65	10.59	10.04	12.35	11.89			
Consumer's Accuracy (%)	81.35	89.41	89.96	87.65	88.11			
Overall Accuracy	87.3							
Kappa coefficient	0.84							

¹ F = Forest land, A = Agricultural land, U = Urban and built-up land, R = Recreation area, and M = Miscellaneous land

Table S4. Matrix of LUC in the Koh Chang area, 1990-2005 (km²).

LUC		2005					Changing area	
		F	A	U	R	M	Total	km ² %
1990	F	171.19	10.10	2.34	0.25	0.95	184.83	-6.15 -3.35
	A	7.02	12.62	3.71	0.29	0.42	24.06	-0.75 -18.50
	U	0.33	0.49	0.57	0.01	0.06	1.46	5.30 486.99
	R	0.01	0.00	0.01	0.06	0.01	0.09	0.52 2944.44
	M	0.13	0.10	0.13	0.00	0.30	0.66	1.08 133.33
	Total	178.68	23.31	6.76	0.61	1.74	0.00	

Table S5. Matrix of LUC in the Koh Chang area, 2005-2020 (km²).

LUC		2020					Changing area	
		F	A	U	R	M	Total	km ² %
2005	F	177.15	0.54	0.92	0.07	0.00	178.68	0.03 -3.35
	A	0.97	18.84	3.15	0.34	0.01	23.31	-3.70 -18.50
	U	0.47	0.14	4.32	1.83	0.00	6.76	1.81 486.99
	R	0.01	0.05	0.07	0.48	0.00	0.61	2.13 2944.44
	M	0.11	0.04	0.11	0.02	1.46	1.74	-0.27 133.33
	Total	178.71	19.61	8.57	2.74	1.47	0.00	