

Supplementary material

Table 1. The confusion matrix of the land use/land cover classification for the image acquired from 1987 to 2017

1987	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	107	3	0	0	8	6	0	0	0
Natural forest	5	84	0	0	3	12	0	0	0
Buildings	0	0	94	0	0	0	0	0	14
Farmland	0	0	0	92	1	0	0	0	0
HC grassland	15	21	0	8	112	12	0	0	0
Shrubs	5	3	0	0	1	89	0	0	0
Mixed forest	0	0	0	0	0	0	93	22	0
LC grassland	0	0	0	0	0	0	33	83	0
Bare land	0	0	6	0	0	0	0	0	86
User accuracy	86%	80%	87%	99%	66%	91%	81%	72%	93%
Producer accuracy	81%	76%	94%	92%	89%	74%	74%	79%	86%
Overall accuracy					82.40%				
Kappa coefficient					0.8061				

1988	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	76	4	0	0	6	1	0	0	0
Natural forest	2	94	0	0	3	7	0	0	0
Buildings	0	0	121	0	0	0	0	0	17
Farmland	0	0	0	97	1	0	0	0	0
HC grassland	14	31	0	8	96	2	0	0	0
Shrubs	7	4	0	0	4	95	0	0	0
Mixed forest	0	0	0	0	0	0	84	24	0
LC grassland	0	0	0	0	0	0	16	81	0
Bare land	0	0	11	0	0	0	0	0	103
User accuracy	88%	88%	88%	99%	63%	86%	78%	83%	91%
Producer accuracy	76%	71%	92%	92%	87%	90%	84%	77%	86%
Overall accuracy					83.85%				
Kappa coefficient					0.8217				

1989	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	94	2	0	0	15	3	0	0	0
Natural forest	3	91	0	0	3	22	0	0	0
Buildings	0	0	108	0	0	0	0	0	15

Farmland	0	0	0	97	6	0	0	0	0
HC grassland	8	11	0	8	76	6	0	0	0
Shrubs	5	6	0	0	6	89	0	0	0
Mixed forest	0	0	0	0	0	0	95	27	0
LC grassland	0	0	0	0	0	0	15	78	0
Bare land	0	0	12	0	0	0	0	0	90
User accuracy	83%	76%	88%	94%	69%	84%	78%	83%	88%
Producer accuracy	85%	83%	90%	92%	72%	74%	86%	74%	86%
Overall accuracy					82.46%				
Kappa coefficient					0.8069				

1990	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	78	3	0	0	6	2	0	0	0
Natural forest	4	103	0	0	4	14	0	0	0
Buildings	0	0	105	0	0	0	0	0	15
Farmland	0	0	0	119	6	0	0	0	0
HC grassland	13	20	0	13	106	7	0	0	0
Shrubs	4	6	0	0	4	96	0	0	0
Mixed forest	0	0	0	0	0	0	114	16	0
LC grassland	0	0	0	0	0	0	18	84	0
Bare land	0	0	6	0	0	0	0	0	85
User accuracy	87%	82%	87%	95%	66%	87%	88%	82%	94%
Producer accuracy	78%	78%	95%	90%	84%	80%	86%	84%	85%
Overall accuracy					84.47%				
Kappa coefficient					0.8284				

1991	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	108	2	0	0	9	3	0	0	0
Natural forest	2	88	0	0	2	7	0	0	0
Buildings	0	0	108	0	0	0	0	0	15
Farmland	0	0	0	97	4	0	0	0	0
HC grassland	14	13	0	13	102	4	0	0	0
Shrubs	7	7	0	0	4	90	0	0	0
Mixed forest	0	0	0	0	0	0	92	11	0
LC grassland	0	0	0	0	0	0	18	95	0
Bare land	0	0	12	0	0	0	0	0	90
User accuracy	88%	88%	88%	96%	69%	84%	90%	84%	88%
Producer accuracy	82%	80%	90%	88%	85%	86%	84%	90%	86%
Overall accuracy					85.60%				
Kappa coefficient					0.8408				

1992	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	107	2	0	0	6	4	0	0	0
Natural forest	3	84	0	0	2	24	0	0	0
Buildings	0	0	102	0	0	0	0	0	15
Farmland	0	0	0	112	5	0	0	0	0
HC grassland	15	15	0	14	104	12	0	0	0
Shrubs	8	4	0	0	3	92	0	0	0
Mixed forest	0	0	0	0	0	0	86	24	0
LC grassland	0	0	0	0	0	0	19	102	0
Bare land	0	0	8	0	0	0	0	0	117
User accuracy	90%	75%	88%	96%	65%	86%	78%	84%	94%
Producer accuracy	81%	80%	93%	89%	87%	70%	82%	81%	89%
Overall accuracy					83.44%				
Kappa coefficient					0.8173				

1993	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	89	3	0	0	11	1	0	0	0
Natural forest	2	94	0	0	5	6	0	0	0
Buildings	0	0	101	0	0	0	0	0	19
Farmland	0	0	0	97	8	0	0	0	0
HC grassland	11	21	0	8	100	3	0	0	0
Shrubs	3	3	0	0	3	95	0	0	0
Mixed forest	0	0	0	0	0	0	102	15	0
LC grassland	0	0	0	0	0	0	30	117	0
Bare land	0	0	9	0	0	0	0	0	101
User accuracy	86%	88%	84%	92%	69%	92%	88%	79%	92%
Producer accuracy	85%	78%	92%	92%	79%	90%	77%	89%	84%
Overall accuracy					84.80%				
Kappa coefficient					0.8321				

1994	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	84	3	0	0	7	2	0	0	0
Natural forest	3	103	0	0	3	12	0	0	0
Buildings	0	0	115	0	0	0	0	0	14
Farmland	0	0	0	108	1	0	0	0	0
HC grassland	16	23	0	12	91	10	0	0	0
Shrubs	8	3	0	0	3	86	0	0	0
Mixed forest	0	0	0	0	0	0	97	12	0
LC grassland	0	0	0	0	0	0	23	88	0
Bare land	0	0	11	0	0	0	0	0	106
User accuracy	87%	85%	89%	99%	60%	86%	89%	79%	90%

Producer accuracy	76%	78%	91%	90%	87%	78%	81%	88%	88%
Overall accuracy	84.10%								
Kappa coefficient	0.8245								

1995	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	86	3	0	0	11	3	0	0	0
Natural forest	5	92	0	0	4	7	0	0	0
Buildings	0	0	121	0	0	0	0	0	14
Farmland	0	0	0	106	2	0	0	0	0
HC grassland	15	9	0	14	91	4	0	0	0
Shrubs	5	1	0	0	2	86	0	0	0
Mixed forest	0	0	0	0	0	0	107	11	0
LC grassland	0	0	0	0	0	0	25	99	0
Bare land	0	0	11	0	0	0	0	0	96
User accuracy	84%	86%	89%	98%	69%	92%	91%	80%	90%
Producer accuracy	78%	88%	92%	88%	83%	86%	81%	90%	87%
Overall accuracy	85.92%								
Kappa coefficient	0.8442								

1996	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	110	8	0	0	8	3	0	0	0
Natural forest	4	92	0	0	4	19	0	0	0
Buildings	0	0	99	0	0	0	0	0	11
Farmland	0	0	0	89	4	0	0	0	0
HC grassland	11	28	0	11	80	6	0	0	0
Shrubs	7	4	0	0	4	98	0	0	0
Mixed forest	0	0	0	0	0	0	89	30	0
LC grassland	0	0	0	0	0	0	16	102	0
Bare land	0	0	11	0	0	0	0	0	95
User accuracy	85%	77%	90%	96%	59%	87%	75%	87%	90%
Producer accuracy	83%	70%	90%	89%	80%	78%	85%	77%	90%
Overall accuracy	81.92%								
Kappa coefficient	0.8010								

1997	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	101	5	0	0	13	2	0	0	0
Natural forest	4	94	0	0	5	10	0	0	0
Buildings	0	0	110	0	0	0	0	0	24
Farmland	0	0	0	116	3	0	0	0	0
HC grassland	13	16	0	16	106	8	0	0	0
Shrubs	2	5	0	0	5	101	0	0	0

Mixed forest	0	0	0	0	0	0	106	34	0
LC grassland	0	0	0	0	0	0	20	98	0
Bare land	0	0	10	0	0	0	0	0	108
<u>User accuracy</u>	83%	83%	82%	98%	67%	89%	76%	83%	92%
<u>Producer accuracy</u>	84%	78%	92%	88%	80%	84%	84%	74%	82%
<u>Overall accuracy</u>	82.81%								
<u>Kappa coefficient</u>	0.8107								

1998	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	86	3	0	0	12	3	0	0	0
Natural forest	2	107	0	0	5	24	0	0	0
Buildings	0	0	123	0	0	0	0	0	20
Farmland	0	0	0	112	2	0	0	0	0
HC grassland	15	20	0	14	81	7	0	0	0
Shrubs	2	3	0	0	5	92	0	0	0
Mixed forest	0	0	0	0	0	0	91	17	0
LC grassland	0	0	0	0	0	0	14	88	0
Bare land	0	0	9	0	0	0	0	0	100
<u>User accuracy</u>	83%	78%	86%	98%	59%	91%	84%	87%	92%
<u>Producer accuracy</u>	82%	81%	93%	89%	77%	73%	87%	84%	83%
<u>Overall accuracy</u>	83.32%								
<u>Kappa coefficient</u>	0.8160								

1999	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	114	2	0	0	12	4	0	0	0
Natural forest	4	104	0	0	2	11	0	0	0
Buildings	0	0	103	0	0	0	0	0	12
Farmland	0	0	0	99	2	0	0	0	0
HC grassland	11	9	0	11	83	4	0	0	0
Shrubs	4	5	0	0	2	86	0	0	0
Mixed forest	0	0	0	0	0	0	98	15	0
LC grassland	0	0	0	0	0	0	28	95	0
Bare land	0	0	7	0	0	0	0	0	88
<u>User accuracy</u>	87%	86%	90%	98%	70%	90%	86%	77%	93%
<u>Producer accuracy</u>	86%	87%	94%	90%	83%	82%	78%	86%	88%
<u>Overall accuracy</u>	85.91%								
<u>Kappa coefficient</u>	0.8441								

2000	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	79	2	0	0	13	2	0	0	0
Natural forest	3	90	0	0	3	12	0	0	0

Buildings	0	0	97	0	0	0	0	0	16
Farmland	0	0	0	96	5	0	0	0	0
HC grassland	18	12	0	9	85	4	0	0	0
Shrubs	5	6	0	0	5	87	0	0	0
Mixed forest	0	0	0	0	0	0	107	24	0
LC grassland	0	0	0	0	0	0	25	76	0
Bare land	0	0	8	0	0	0	0	0	84
User accuracy	83%	84%	86%	95%	66%	84%	82%	75%	91%
Producer accuracy	75%	82%	92%	91%	77%	83%	81%	76%	84%
Overall accuracy					82.29%				
Kappa coefficient					0.8050				

2001	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	112	5	0	0	18	3	0	0	0
Natural forest	1	74	0	0	7	8	0	0	0
Buildings	0	0	95	0	0	0	0	0	11
Farmland	0	0	0	89	4	0	0	0	0
HC grassland	11	16	0	11	91	5	0	0	0
Shrubs	1	5	0	0	7	95	0	0	0
Mixed forest	0	0	0	0	0	0	88	28	0
LC grassland	0	0	0	0	0	0	17	98	0
Bare land	0	0	5	0	0	0	0	0	89
User accuracy	81%	82%	90%	96%	68%	87%	76%	85%	95%
Producer accuracy	89%	74%	95%	89%	72%	86%	84%	78%	89%
Overall accuracy					83.68%				
Kappa coefficient					0.8199				

2002	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	86	3	0	0	10	1	0	0	0
Natural forest	5	103	0	0	2	8	0	0	0
Buildings	0	0	99	0	0	0	0	0	20
Farmland	0	0	0	92	6	0	0	0	0
HC grassland	12	23	0	13	85	4	0	0	0
Shrubs	7	3	0	0	2	86	0	0	0
Mixed forest	0	0	0	0	0	0	93	30	0
LC grassland	0	0	0	0	0	0	12	90	0
Bare land	0	0	11	0	0	0	0	0	100
User accuracy	86%	87%	83%	94%	62%	88%	76%	89%	90%
Producer accuracy	78%	78%	90%	88%	81%	86%	89%	75%	83%
Overall accuracy					82.85%				
Kappa coefficient					0.8110				

2003	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	94	3	0	0	7	3	0	0	0
Natural forest	8	100	0	0	2	5	0	0	0
Buildings	0	0	100	0	0	0	0	0	13
Farmland	0	0	0	120	3	0	0	0	0
HC grassland	27	22	0	12	94	5	0	0	0
Shrubs	4	6	0	0	5	87	0	0	0
Mixed forest	0	0	0	0	0	0	85	29	0
LC grassland	0	0	0	0	0	0	25	76	0
Bare land	0	0	10	0	0	0	0	0	119
User accuracy	88%	87%	88%	97%	59%	85%	74%	75%	92%
Producer accuracy	71%	76%	91%	91%	85%	87%	77%	72%	90%
Overall accuracy					82.21%				
Kappa coefficient					0.8040				

2004	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	74	2	0	0	11	6	0	0	0
Natural forest	6	84	0	0	5	19	0	0	0
Buildings	0	0	115	0	0	0	0	0	11
Farmland	0	0	0	115	5	0	0	0	0
HC grassland	22	10	0	11	100	6	0	0	0
Shrubs	3	5	0	0	5	100	0	0	0
Mixed forest	0	0	0	0	0	0	103	25	0
LC grassland	0	0	0	0	0	0	17	75	0
Bare land	0	0	11	0	0	0	0	0	95
User accuracy	80%	73%	92%	96%	67%	88%	80%	82%	89%
Producer accuracy	70%	84%	91%	91%	79%	76%	86%	75%	90%
Overall accuracy					82.63%				
Kappa coefficient					0.8085				

2005	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	100	2	0	0	14	2	0	0	0
Natural forest	3	110	0	0	3	11	0	0	0
Buildings	0	0	101	0	0	0	0	0	19
Farmland	0	0	0	97	3	0	0	0	0
HC grassland	22	16	0	8	91	3	0	0	0
Shrubs	6	4	0	0	9	95	0	0	0
Mixed forest	0	0	0	0	0	0	117	28	0
LC grassland	0	0	0	0	0	0	15	77	0
Bare land	0	0	9	0	0	0	0	0	107
User accuracy	85%	87%	84%	97%	65%	83%	81%	84%	92%

Producer accuracy	76%	83%	92%	92%	76%	86%	89%	73%	85%
Overall accuracy	83.46%								
Kappa coefficient	0.8176								

2006	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	100	1	0	0	8	2	0	0	0
Natural forest	4	99	0	0	2	11	0	0	0
Buildings	0	0	105	0	0	0	0	0	17
Farmland	0	0	0	100	2	0	0	0	0
HC grassland	14	9	0	10	111	3	0	0	0
Shrubs	2	1	0	0	5	95	0	0	0
Mixed forest	0	0	0	0	0	0	114	37	0
LC grassland	0	0	0	0	0	0	18	89	0
Bare land	0	0	6	0	0	0	0	0	103
User accuracy	91%	86%	86%	99%	75%	92%	76%	83%	95%
Producer accuracy	83%	90%	95%	91%	88%	86%	86%	71%	86%
Overall accuracy	85.98%								
Kappa coefficient	0.8450								

2007	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	89	2	0	0	16	1	0	0	0
Natural forest	4	95	0	0	5	8	0	0	0
Buildings	0	0	120	0	0	0	0	0	18
Farmland	0	0	0	107	3	0	0	0	0
HC grassland	29	9	0	13	100	4	0	0	0
Shrubs	4	5	0	0	3	119	0	0	0
Mixed forest	0	0	0	0	0	0	83	29	0
LC grassland	0	0	0	0	0	0	22	71	0
Bare land	0	0	6	0	0	0	0	0	87
User accuracy	83%	85%	87%	98%	64%	92%	74%	76%	93%
Producer accuracy	71%	86%	95%	89%	79%	90%	79%	71%	83%
Overall accuracy	82.86%								
Kappa coefficient	0.8110								

2008	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	98	7	0	0	11	3	0	0	0
Natural forest	4	99	0	0	6	18	0	0	0
Buildings	0	0	102	0	0	0	0	0	17
Farmland	0	0	0	92	8	0	0	0	0
HC grassland	11	17	0	13	92	5	0	0	0
Shrubs	6	10	0	0	3	107	0	0	0

Mixed forest	0	0	0	0	0	0	103	15	0
LC grassland	0	0	0	0	0	0	23	95	0
Bare land	0	0	8	0	0	0	0	0	115
User accuracy	83%	78%	86%	92%	67%	85%	87%	81%	94%
Producer accuracy	82%	75%	93%	88%	77%	81%	82%	86%	87%
Overall accuracy	83.18%								
Kappa coefficient	0.8146								

2009	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	95	3	0	0	11	3	0	0	0
Natural forest	1	74	0	0	6	5	0	0	0
Buildings	0	0	108	0	0	0	0	0	11
Farmland	0	0	0	100	3	0	0	0	0
HC grassland	7	18	0	10	92	5	0	0	0
Shrubs	2	5	0	0	8	91	0	0	0
Mixed forest	0	0	0	0	0	0	85	20	0
LC grassland	0	0	0	0	0	0	15	112	0
Bare land	0	0	12	0	0	0	0	0	99
User accuracy	85%	86%	91%	97%	69%	85%	81%	88%	89%
Producer accuracy	90%	74%	90%	91%	77%	87%	85%	85%	90%
Overall accuracy	85.48%								
Kappa coefficient	0.8395								

2010	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	82	2	0	0	11	3	0	0	0
Natural forest	2	102	0	0	4	18	0	0	0
Buildings	0	0	95	0	0	0	0	0	15
Farmland	0	0	0	88	2	0	0	0	0
HC grassland	11	19	0	12	107	5	0	0	0
Shrubs	5	2	0	0	2	106	0	0	0
Mixed forest	0	0	0	0	0	0	114	23	0
LC grassland	0	0	0	0	0	0	18	77	0
Bare land	0	0	11	0	0	0	0	0	85
User accuracy	83%	81%	86%	98%	69%	92%	83%	81%	89%
Producer accuracy	82%	81%	90%	88%	85%	80%	86%	77%	85%
Overall accuracy	83.72%								
Kappa coefficient	0.8202								

2011	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	79	1	0	0	9	1	0	0	0
Natural forest	4	106	0	0	2	7	0	0	0

Buildings	0	0	116	0	0	0	0	0	19
Farmland	0	0	0	98	4	0	0	0	0
HC grassland	15	12	0	12	102	3	0	0	0
Shrubs	2	1	0	0	4	89	0	0	0
Mixed forest	0	0	0	0	0	0	90	26	0
LC grassland	0	0	0	0	0	0	30	84	0
Bare land	0	0	10	0	0	0	0	0	107
User accuracy	87%	89%	86%	96%	71%	93%	77%	74%	91%
Producer accuracy	79%	88%	92%	89%	85%	89%	75%	76%	85%
Overall accuracy	84.31%								
Kappa coefficient	0.8268								

2013	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	77	4	0	0	4	3	0	0	0
Natural forest	2	111	0	0	4	17	0	0	0
Buildings	0	0	105	0	0	0	0	0	25
Farmland	0	0	0	90	6	0	0	0	0
HC grassland	18	15	0	10	98	8	0	0	0
Shrubs	2	2	0	0	6	83	0	0	0
Mixed forest	0	0	0	0	0	0	87	19	0
LC grassland	0	0	0	0	0	0	13	101	0
Bare land	0	0	6	0	0	0	0	0	101
User accuracy	87%	83%	81%	93%	66%	88%	82%	89%	95%
Producer accuracy	77%	84%	95%	90%	82%	75%	87%	84%	80%
Overall accuracy	83.68%								
Kappa coefficient	0.8199								

2014	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land
Cultivated forest	85	4	0	0	7	5	0	0	0
Natural forest	4	114	0	0	4	15	0	0	0
Buildings	0	0	121	0	0	0	0	0	13
Farmland	0	0	0	91	4	0	0	0	0
HC grassland	12	11	0	9	110	5	0	0	0
Shrubs	4	4	0	0	7	95	0	0	0
Mixed forest	0	0	0	0	0	0	76	16	0
LC grassland	0	0	0	0	0	0	29	116	0
Bare land	0	0	11	0	0	0	0	0	113
User accuracy	85%	83%	91%	95%	75%	87%	83%	80%	91%
Producer accuracy	81%	86%	92%	91%	83%	79%	72%	88%	90%
Overall accuracy	84.92%								
Kappa coefficient	0.8332								

2015	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land	Photovoltaic panel
Cultivated forest	97	1	0	0	15	2	0	0	0	97
Natural forest	6	106	0	0	5	8	0	0	0	6
Buildings	0	0	117	0	0	0	0	0	21	0
Farmland	0	0	0	92	2	0	0	0	0	0
HC grassland	14	9	0	8	86	6	0	0	0	14
Shrubs	9	4	0	0	2	85	0	0	0	9
Mixed forest	0	0	0	0	0	0	111	15	0	0
LC grassland	0	0	0	0	0	0	15	90	0	0
Bare land	0	0	9	0	0	0	0	0	105	0
Photovoltaic panel	85%	85%	85%	97%	70%	85%	88%	86%	92%	85%
User accuracy	77%	88%	93%	92%	78%	85%	88%	86%	83%	77%
Producer accuracy	97	1	0	0	15	2	0	0	0	97
Overall accuracy	85.50%									
Kappa coefficient	0.8397									

2016	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land	Photovoltaic panel
Cultivated forest	116	3	0	0	9	3	0	0	0	116
Natural forest	3	104	0	0	3	8	0	0	0	3
Buildings	0	0	121	0	0	0	0	0	14	0
Farmland	0	0	0	101	2	0	0	0	0	0
HC grassland	8	8	0	9	89	3	0	0	0	8
Shrubs	5	5	0	0	2	87	0	0	0	5
Mixed forest	0	0	0	0	0	0	96	25	0	0
LC grassland	0	0	0	0	0	0	30	85	0	0
Bare land	0	0	11	0	0	0	0	0	106	0
Photovoltaic panel	88%	88%	89%	98%	77%	89%	79%	74%	91%	88%
User accuracy	88%	87%	92%	92%	85%	87%	76%	77%	88%	88%
Producer accuracy	116	3	0	0	9	3	0	0	0	116
Overall accuracy	85.83%									
Kappa coefficient	0.8432									

2017	Cultivated forest	Natural forest	Buildings	Farmland	HC grassland	Shrubs	Mixed forest	LC grassland	Bare land	Photovoltaic panel
Cultivated forest	119	2	0	0	8	3	0	0	0	119
Natural forest	1	106	0	0	2	8	0	0	0	1
Buildings	0	0	95	0	0	0	0	0	25	0
Farmland	0	0	0	116	2	0	0	0	0	0
HC grassland	9	14	0	16	85	5	0	0	0	9
Shrubs	3	4	0	0	5	111	0	0	0	3

Mixed forest	0	0	0	0	0	0	103	16	0	0
LC grassland	0	0	0	0	0	0	17	84	0	0
Bare land	0	0	5	0	0	0	0	0	101	0
Photovoltaic panel	90%	91%	79%	99%	66%	91%	87%	83%	95%	90%
<hr/> User accuracy	90%	84%	95%	88%	85%	88%	86%	84%	80%	90%
<hr/> Producer accuracy	119	2	0	0	8	3	0	0	0	119
<hr/> Overall accuracy	86.60%									
<hr/> Kappa coefficient	0.8515									