

## Supplement Material

**Table S1.** Principal component analysis of four variables.

	PC1	PC2	PC3	PC4
<b>2002</b>				
Loading of Wet	-0.343	-0.845	-0.411	0.013
Loading of NDVI	-0.810	0.487	-0.327	0.004
Loading of NDBI	0.334	0.151	-0.612	-0.701
Loading of LST	0.340	0.161	-0.592	0.713
Covariance eigenvalue of each PC	0.018	0.005	0.001	0.000
Percent covariance eigenvalue (%)	78.26	20.87	2.17	0.00
<b>2004</b>				
Loading of Wet	-0.278	-0.853	-0.442	0.009
Loading of NDVI	-0.906	0.386	-0.174	0.003
Loading of NDBI	0.220	0.243	-0.621	-0.712
Loading of LST	0.231	0.256	-0.623	0.702
Covariance eigenvalue of each PC	0.030	0.006	0.001	0.000
Percent covariance eigenvalue (%)	81.08	16.22	2.70	0.00
<b>2007</b>				
Loading of Wet	-0.283	-0.855	0.434	-0.026
Loading of NDVI	-0.851	0.432	0.298	0.014
Loading of NDBI	0.305	0.174	0.585	0.731
Loading of LST	0.320	0.228	0.617	-0.682
Covariance eigenvalue of each PC	0.011	0.003	0.001	0.000
Percent covariance eigenvalue (%)	78.36	18.66	2.23	0.00
<b>2009</b>				
Loading of Wet	-0.522	-0.674	-0.523	0.001
Loading of NDVI	-0.626	0.719	-0.302	0.002
Loading of NDBI	0.402	0.119	-0.557	-0.717
Loading of LST	0.416	0.121	-0.571	0.697
Covariance eigenvalue of each PC	0.024	0.005	0.001	0.000
Percent covariance eigenvalue (%)	80.01	16.66	3.33	0.00
<b>2011</b>				
Loading of Wet	-0.319	-0.851	0.418	-0.009
Loading of NDVI	-0.816	0.470	0.335	-0.013
Loading of NDBI	0.326	0.162	0.594	0.717
Loading of LST	0.355	0.169	0.600	-0.697
Covariance eigenvalue of each PC	0.014	0.003	0.001	0.000
Percent covariance eigenvalue (%)	79.33	17.88	2.79	0.00
<b>2013</b>				
Loading of Wet	-0.444	-0.784	0.434	-0.005
Loading of NDVI	-0.777	0.620	0.530	0.000
Loading of NDBI	0.470	0.007	0.504	0.725
Loading of LST	0.498	0.014	0.526	-0.689
Covariance eigenvalue of each PC	0.025	0.004	0.001	0.000
Percent covariance eigenvalue (%)	83.33	13.33	3.33	0.00
<b>2015</b>				
Loading of Wet	-0.224	-0.828	0.514	-0.007
Loading of NDVI	-0.848	0.425	0.316	-0.019
Loading of NDBI	0.303	0.242	0.532	0.753
Loading of LST	0.373	0.273	0.595	-0.658
Covariance eigenvalue of each PC	0.013	0.003	0.001	0.000
Percent covariance eigenvalue (%)	76.83	20.73	2.45	0.00
<b>2017</b>				
Loading of Wet	-0.308	-0.878	0.365	0.003
Loading of NDVI	-0.825	0.438	0.357	0.004
Loading of NDBI	0.332	0.133	0.595	0.720
Loading of LST	0.338	0.137	0.621	-0.694
Covariance eigenvalue of each PC	0.038	0.005	0.001	0.000
Percent covariance eigenvalue (%)	86.36	11.36	2.27	0.00

**Table S2.** Comparison of the quantity and percentage of significant pixels with positive vs. negative trend.

T-S & M-K Test	RSEI Trend	Pixel Number	Percentage (%)
$\beta < 0,  S  > 14$	Strong negative	4394	0.91
$\beta < 0,  S  \leq 14$	Negative	74760	15.41
$\beta > 0,  S  \leq 14$	Positive	294005	60.59
$\beta > 0,  S  > 14$	Strong positive	112093	23.10
Total		485252	100.00

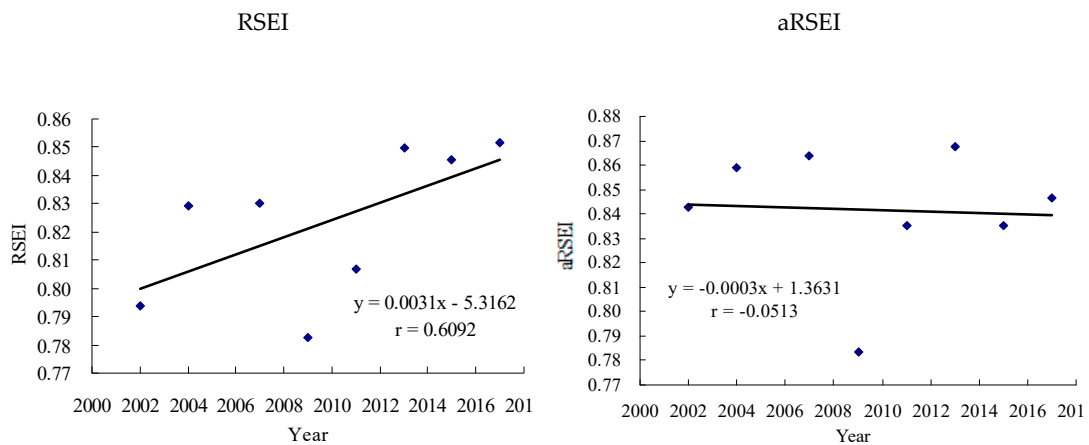
Note: The  $\alpha$  used to determine significance is 0.05.

**Table S3.** Metrological and land cover data of Fujian in the study years and their relationship with RSEI and aRSEI scores.

Year	Forest (km <sup>2</sup> )	Built-Up (km <sup>2</sup> )	Air Temperature (°C)	Precipitation (mm)	aRSEI	RSEI
2002	73537	5557	19.64	1705.09	0.8429	0.7940
2004	76494	5761	19.16	1346.11	0.8591	0.8291
2007	76822	6312	19.64	1458.57	0.8637	0.8302
2009	76992	6832	19.47	1275.3	0.7836	0.7824
2011	77771	7271	18.82	1267.63	0.8350	0.8067
2013	80127	7706	19.34	1554.14	0.8678	0.8496
2015	80371	8179	19.59	1955.72	0.8350	0.8455
2017	80615	8553	19.78	1515.72	0.8465	0.8515
$R^2$ (with RSEI, $p < 0.001$ )	0.5790	0.3555	0.0524	0.1708		
$R^2$ (with aRSEI, $p < 0.001$ )	0.0146	0.0037	0.0000	0.0497		

**Table S4.** Comparison of the results of statistical tests between RSEI and aRSEI.

Statistical Test		RSEI	aRSEI
Theil-Sen estimator	Slope	0.0027	0.0001
Mann-Kendall test	S	16	1
	$p$ -value	0.031	1



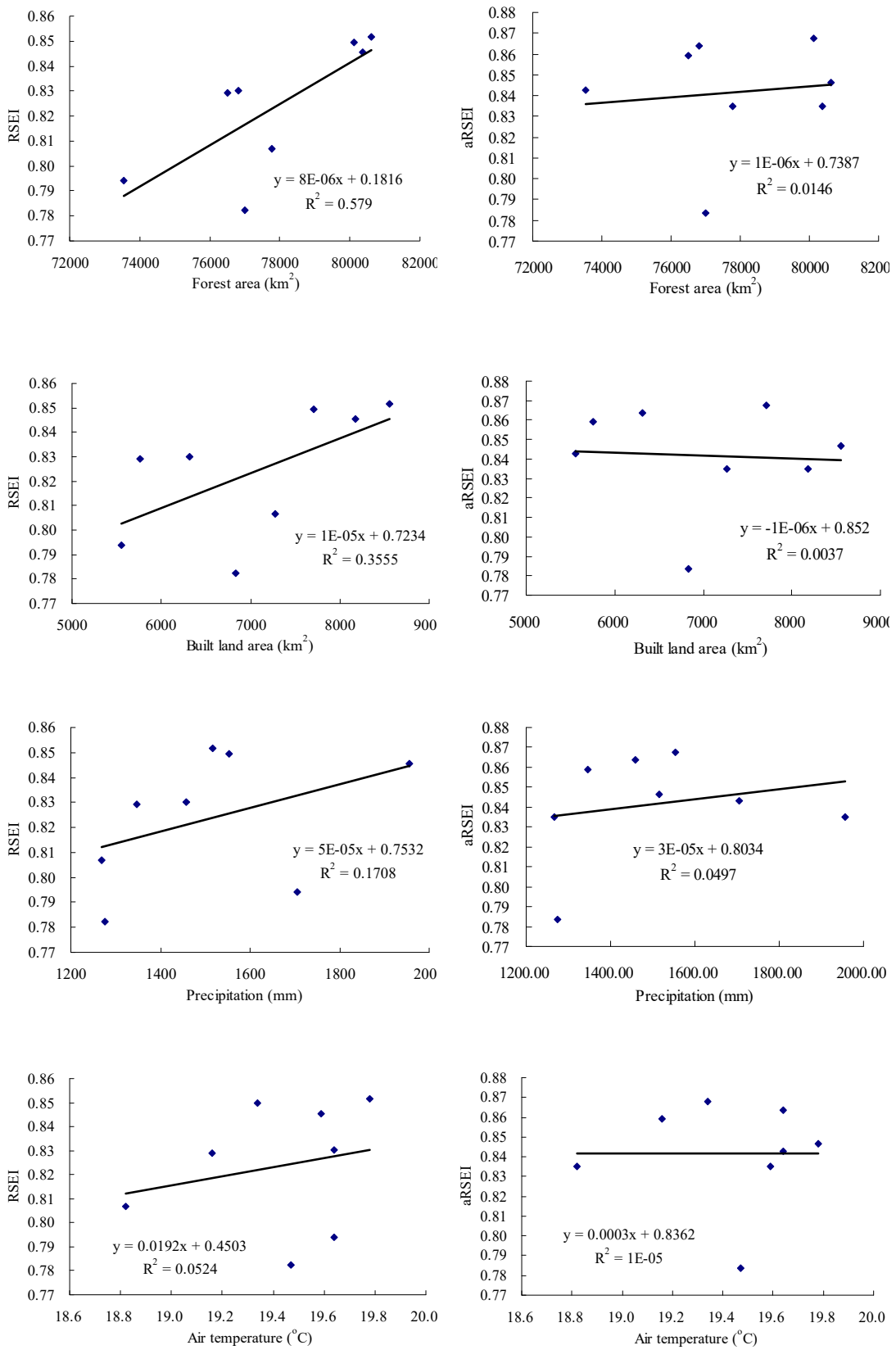


Figure S1. The trends of RSEI (left column) and aRSEI (right column) over the study years and the correlation of RSEI and aRSEI to each of the four factors (forest, built land, precipitation and air temperature).