Supplementary data

Table S1. Dixon test results (a) cool dry season, (b) hot dry season and (c) peak rainy season for the period 2009 - 2018

a. Dixon test results for the cool dry season

	LAI_{Min}	LAI_{Max}	LAI_{Mean}	LST_{Min}	LST_{Max}	LST_{Mean}	$NDII_{Min}$	$NDII_{Max}$	$NDII_{Mean}$	$NDVI_{Min}$	$NDVI_{Max}$	$NDVI_{Mean}$
R_{22} (Observed value)	0.23	0.47	0.10	0.15	0.21	0.12	0.18	0.13	0.25	0.15	0.15	0.16
R_{22} (Critical value)	0.27	0.23	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
p-value (Two-tailed)	0.13	<0.0001	0.99	0.55	0.21	0.87	0.33	0.70	0.08	0.59	0.55	0.51
alpha	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

b. Dixon test results for the hot dry season

	LAI_{Min}	LAI_{Max}	LAI_{Mean}	LST_{Min}	LST_{Max}	LST_{Mean}	$NDII_{Min}$	$NDII_{Max}$	$NDII_{Mean}$	$NDVI_{Min}$	$NDVI_{Max}$	$NDVI_{Mean}$
R_{22} (Observed value)	0.25	0.44	0.09	0.09	0.10	0.10	0.18	0.11	0.15	0.15	0.12	0.12
R_{22} (Critical value)	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
p-value (Two-tailed)	0.09	0.0002	0.75	0.76	0.95	0.88	0.35	0.94	0.62	0.59	0.82	0.85
alpha	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

c. Dixon test results for the rainy season

	LAI_{Min}	LAI_{Max}	LAI_{Mean}	LST_{Min}	LST_{Max}	LST_{Mean}	$NDII_{Min}$	$NDII_{Max}$	$NDII_{Mean}$	$NDVI_{Min}$	$NDVI_{Max}$	$NDVI_{Mean}$
R_{22} (Observed value)	0.09	0.13	0.07	0.16	0.14	0.13	0.11	0.08	0.05	0.06	0.07	0.09
R_{22} (Critical value)	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
p-value (Two-tailed)	0.95	0.47	0.70	0.30	0.45	0.50	0.74	0.83	0.54	0.62	0.73	0.98
alpha	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

Table S2 (a – d). ANOVA statistics of variables

(a) ANOVA statistics for *LAI* rainy and dry season variations

Summary statistics

Group Name	N	Missing	Mean	Std Dev	SEM
LAI Rainy season	230	0	4.393	1.232	0.0819
LAI Dry season	230	0	2.073	0.741	0.0488

ANOVA analysis

Source of Variation	DF	SS	MS	F	P
Between Groups	1	613.803	613.803	596.620	<0.001
Residual	454	467.075	1.029		
Total	455	1080.878			

All Pairwise Multiple Comparison Procedures (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
LAI Rainy se vs. LAI Dry seas	2.320	24.426	<0.001	Yes

(b) ANOVA statistics for *NDVI* rainy and dry season variations

Treatment Name	N	Missing	Mean	Std Dev	SEM
NDVI Rainy season	230	0	0.634	0.0731	0.00482
NDVI Dry season	230	0	0.508	0.0795	0.00529

Source of Variation	DF	SS	MS	F	P
Between Groups	1	1.786	1.786	306.697	<0.001
Residual	454	2.644	0.00582		
Total	455	4.431			

All Pairwise Multiple Comparison Procedures (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
NDVI Rainy season vs. NDVI Dry season	0.125	17.513	<0.001	Yes

(c) ANOVA statistics for NDII rainy and dry season variations

Treatment Name	N	Missing	Mean	Std Dev	SEM
NDII Rainy season	230	0	0.110	0.0693	0.00457
NDII Dry season	230	0	-0.0439	0.0802	0.00529

Source of Variation	DF	SS	MS	F	P
Between Groups	1	2.727	2.727	485.119	<0.001
Residual	458	2.574	0.00562		
Total	459	5.301			

The differences in the mean values among the treatment groups are greater than would be expected by chance; there is a statistically significant difference (P = <0.001).

Power of performed test with alpha = 0.050: 1.000

All Pairwise Multiple Comparison Procedures (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
NDII Rainy s vs. NDII Dry sea	0.154	22.025	<0.001	Yes

(d) ANOVA statistics for LST rainy and dry season variations

Summary statistics

Group Name	N	Missing	Mean	Std Dev	SEM
LST Rainy season	230	0	35.503	4.913	0.331
LST Dry season	230	0	33.019	6.397	0.431

Source of Variation	DF	SS	MS	F	P
Between Groups	1	679.076	679.076	20.874	<0.001
Residual	438	14249.296	32.533		
Total	439	14928.371			

All Pairwise Multiple Comparison Procedures (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
LST Rainy se vs. LST Dry seas	2.485	4.569	<0.001	Yes

Table S3 (a – d). ANOVA statistics for inter-annual variations

(a) Leaf Area Index ANOVA test results

Summary statistics

Treatment Name	N	Missing	Mean	Std Dev	SEM
LAI09	23	0	1.315	0.235	0.0489
LAI10	23	0	1.284	0.230	0.0480
LAI-11	23	0	1.366	0.272	0.0568
LAI-12	23	0	1.338	0.281	0.0586
LAI-13	23	0	1.363	0.224	0.0468
LAI-14	23	0	1.477	0.267	0.0557
LAI-15	23	0	1.408	0.241	0.0503
LAI-16	23	0	1.382	0.212	0.0442
LAI-17	23	0	1.458	0.249	0.0519
LAI-18	23	0	1.453	0.262	0.0546

Source of Variation	DF	SS	MS	F	P
Between Subjects	22	11.560	0.525		
Between Treatments	9	0.855	0.0950	9.410	<0.001
Residual	198	1.999	0.0101		
Total	229	14.414			

All Pairwise Multiple Comparison Procedures (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
LAI-14 vs. LAI10	0.193	6.525	<0.001	Yes
LAI-17 vs. LAI10	0.174	5.885	<0.001	Yes
LAI-18 vs. LAI10	0.169	5.709	<0.001	Yes
LAI-14 vs. LAI09	0.162	5.471	<0.001	Yes
LAI-17 vs. LAI09	0.143	4.831	<0.001	Yes
LAI-14 vs. LAI-12	0.139	4.690	<0.001	Yes
LAI-18 vs. LAI09	0.138	4.655	<0.001	Yes
LAI-15 vs. LAI10	0.124	4.194	0.002	Yes
LAI-17 vs. LAI-12	0.120	4.050	0.003	Yes
LAI-18 vs. LAI-12	0.115	3.874	0.005	Yes

LAI-14 vs. LAI-13		0.114	3.839	0.006	Yes
LAI-14 vs. LAI-11		0.112	3.765	0.007	Yes
LAI-16 vs. LAI10		0.0978	3.302	0.037	Yes
LAI-14 vs. LAI-16		0.0955	3.223	0.046	Yes
LAI-17 vs. LAI-13		0.0948	3.199	0.049	Yes
LAI-15 vs. LAI09		0.0930	3.141	0.057	No
LAI-17 vs. LAI-11		0.0926	3.125	0.058	No
LAI-18 vs. LAI-13		0.0896	3.023	0.076	No
LAI-18 vs. LAI-11		0.0874	2.949	0.092	No
LAI-11 vs. LAI10		0.0818	2.760	0.152	No
LAI-13 vs. LAI10		0.0796	2.686	0.179	No
LAI-17 vs. LAI-16		0.0765	2.583	0.224	No
LAI-18 vs. LAI-16		0.0713	2.407	0.326	No
LAI-15 vs. LAI-12		0.0699	2.360	0.348	No
LAI-14 vs. LAI-15		0.0690	2.330	0.357	No
LAI-16 vs. LAI09		0.0666	2.248	0.405	No
LAI-12 vs. LAI10		0.0543	1.834	0.738	No
LAI-11 vs. LAI09		0.0506	1.706	0.815	No
LAI-17 vs. LAI-15		0.0501	1.691	0.808	No
LAI-13 vs. LAI09		0.0483	1.632	0.828	No
LAI-18 vs. LAI-15		0.0449	1.515	0.879	No
LAI-15 vs. LAI-13		0.0447	1.509	0.864	No
LAI-16 vs. LAI-12		0.0435	1.468	0.867	No
LAI-15 vs. LAI-11		0.0425	1.434	0.864	No
LAI09 vs. LAI10		0.0312	1.054	0.978	No
LAI-11 vs. LAI-12		0.0274	0.926	0.988	No
LAI-15 vs. LAI-16		0.0264	0.892	0.985	No
LAI-13 vs. LAI-12		0.0252	0.851	0.982	No
LAI-14 vs. LAI-18		0.0242	0.816	0.977	No
LAI-12 vs. LAI09		0.0231	0.781	0.968	No
LAI-14 vs. LAI-17		0.0190	0.640	0.975	No
LAI-16 vs. LAI-13		0.0183	0.616	0.955	No
LAI-16 vs. LAI-11		0.0161	0.542	0.930	No
LAI-17 vs. LAI-18		0.00522	0.176	0.981	No
LAI-11 vs. LAI-13	0.00221	0.0746	0.941	No	

(b) Land Surface Temperature ANOVA test results

Treatment Name	N	Missing	Mean	Std Dev	SEM
LST09	23	0	20.194	4.142	0.864
LST10	23	0	20.327	4.378	0.913
LST11	23	1	19.587	3.599	0.767
LST-12	23	0	20.009	4.130	0.861
LST-13	23	0	20.197	4.057	0.846
LST-14	23	0	20.054	3.705	0.773
LST-15	23	0	20.274	3.937	0.821
LST-16	23	0	20.008	4.801	1.001
LST-17	23	0	20.267	4.057	0.846
LST-18	23	0	20.303	3.906	0.814

Source of Variation	DF	SS	MS	F	P
Between Subjects	22	3467.534	157.615		
Between Treatments	9	5.083	0.565	0.590	0.805
Residual	197	188.709	0.958		
Total	228	3666.227	16.080		

The differences in the mean values among the treatment groups are not great enough to exclude the possibility that the difference is due to random sampling variability; there is not a statistically significant difference (P = 0.805).

(c) NDII ANOVA test results

Treatment Name	N	Missing	Mean	Std Dev	SEM
NDII09	23	0	-0.0050	0.0649	0.0135
NDII10	23	1	-0.0181	0.0546	0.0116
NDII-11	23	0	-0.00245	0.0580	0.0121
NDII-12	23	0	0.0201	0.0622	0.0130
NDII-13	23	0	0.0332	0.0632	0.0132
NDII-14	23	0	0.0126	0.0622	0.0130
NDII-15	23	1	0.0179	0.0715	0.0152
NDII-16	23	0	0.00420	0.0618	0.0129
NDII-17	23	2	-0.0207	0.0694	0.0152
NDII-18	23	2	0.00627	0.0583	0.0127

Source of Variation	DF	SS	MS	F	P
Between Subjects	22	0.752	0.0342		
Between Treatments	9	0.0484	0.00538	11.265	<0.001
Residual	192	0.0917	0.000478		
Total	223	0.901	0.00404		

All Pairwise Multiple Comparison Procedures (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
NDII-13 vs. NDII10	0.0494	7.570	<0.001	Yes
NDII-13 vs. NDII-17	0.0470	7.103	<0.001	Yes
NDII-13 vs. NDII09	0.0382	5.926	<0.001	Yes
NDII-12 vs. NDII10	0.0363	5.557	<0.001	Yes
NDII-13 vs. NDII-11	0.0357	5.531	<0.001	Yes
NDII-12 vs. NDII-17	0.0339	5.118	<0.001	Yes
NDII-15 vs. NDII10	0.0308	4.668	<0.001	Yes
NDII-13 vs. NDII-16	0.0290	4.500	<0.001	Yes
NDII-14 vs. NDII10	0.0288	4.410	<0.001	Yes
NDII-15 vs. NDII-17	0.0284	4.246	0.001	Yes
NDII-18 vs. NDII10	0.0284	4.239	0.001	Yes
NDII-14 vs. NDII-17	0.0264	3.986	0.003	Yes
NDII-12 vs. NDII09	0.0251	3.888	0.005	Yes
NDII-18 vs. NDII-17	0.0260	3.829	0.006	Yes
NDII-12 vs. NDII-11	0.0225	3.493	0.018	Yes
NDII-13 vs. NDII-14	0.0206	3.199	0.047	Yes
NDII-13 vs. NDII-18	0.0210	3.178	0.049	Yes
NDII-16 vs. NDII10	0.0204	3.126	0.056	No
NDII-15 vs. NDII09	0.0196	3.008	0.077	No
NDII-13 vs. NDII-15	0.0186	2.845	0.121	No
NDII-14 vs. NDII09	0.0176	2.727	0.161	No
NDII-16 vs. NDII-17	0.0180	2.719	0.158	No
NDII-15 vs. NDII-11	0.0171	2.618	0.198	No
NDII-18 vs. NDII09	0.0172	2.596	0.201	No
NDII-12 vs. NDII-16	0.0159	2.462	0.268	No
NDII-14 vs. NDII-11	0.0150	2.332	0.342	No
NDII-18 vs. NDII-11	0.0146	2.211	0.419	No
NDII-11 vs. NDII10	0.0137	2.107	0.487	No
NDII-13 vs. NDII-12	0.0131	2.038	0.526	No
NDII09 vs. NDII10	0.0112	1.717	0.769	No
NDII-11 vs. NDII-17	0.0113	1.714	0.750	No
NDII-15 vs. NDII-16	0.0104	1.599	0.809	No

NDII-16 vs. NDII09	0.00920	1.427	0.889	No
NDII09 vs. NDII-17	0.00879	1.329	0.915	No
NDII-14 vs. NDII-16	0.00838	1.301	0.908	No
NDII-18 vs. NDII-16	0.00798	1.206	0.926	No
NDII-12 vs. NDII-18	0.00789	1.192	0.910	No
NDII-12 vs. NDII-14	0.00748	1.161	0.897	No
NDII-16 vs. NDII-11	0.00665	1.032	0.920	No
NDII-12 vs. NDII-15	0.00543	0.832	0.956	No
NDII-11 vs. NDII09	0.00255	0.395	0.997	No
NDII-15 vs. NDII-18	0.00246	0.367	0.993	No
NDII-17 vs. NDII10	0.00241	0.361	0.978	No
NDII-15 vs. NDII-14	0.00205	0.315	0.939	No
NDII-14 vs. NDII-18	0.000405	0.0612	0.951	No

(d) NDVI ANOVA test results

Summary statistics

Treatment Name	N	Missing	Mean	Std Dev	SEM
NDVI10	23	1	0.567	0.0838	0.0179
NDVI09	23	0	0.562	0.0890	0.0186
NDVI-11	23	0	0.572	0.0794	0.0166
NDVI-12	23	0	0.593	0.0832	0.0173
NDVI-13	23	0	0.588	0.0728	0.0152
NDVI-14	23	0	0.583	0.0817	0.0170
NDVI-15	23	1	0.609	0.0877	0.0187
NDVI-16	23	0	0.576	0.0856	0.0179
NDVI-17	23	2	0.581	0.0965	0.0210
NDVI-18	23	2	0.590	0.0784	0.0171

ANOVA statistics

Source of Variation	DF	SS	MS	F	P
Between Subjects	22	1.411	0.0641		
Between Treatments	9	0.0362	0.00402	7.963	<0.001
Residual	192	0.0969	0.000504		
Total	223	1.546	0.00693		

All Pairwise Multiple Comparison Procedures (Holm-Sidak method):
Overall significance level = 0.05

Comparisons for factor:

Comparison	Diff of Means	t	P	P<0.050
NDVI-15 vs. NDVI09	0.0423	6.312	<0.001	Yes
NDVI-18 vs. NDVI09	0.0368	5.408	<0.001	Yes
NDVI-15 vs. NDVI10	0.0344	5.068	<0.001	Yes
NDVI-15 vs. NDVI-11	0.0318	4.745	<0.001	Yes
NDVI-12 vs. NDVI09	0.0308	4.658	<0.001	Yes
NDVI-18 vs. NDVI10	0.0288	4.193	0.002	Yes
NDVI-15 vs. NDVI-16	0.0277	4.133	0.002	Yes
NDVI-17 vs. NDVI09	0.0278	4.086	0.002	Yes
NDVI-13 vs. NDVI09	0.0260	3.929	0.004	Yes
NDVI-18 vs. NDVI-11	0.0263	3.862	0.006	Yes
NDVI-12 vs. NDVI10	0.0229	3.419	0.027	Yes
NDVI-18 vs. NDVI-16	0.0221	3.258	0.044	Yes
NDVI-14 vs. NDVI09	0.0214	3.232	0.047	Yes
NDVI-15 vs. NDVI-14	0.0209	3.119	0.065	No
NDVI-12 vs. NDVI-11	0.0203	3.071	0.073	No
NDVI-17 vs. NDVI10	0.0198	2.886	0.123	No
NDVI-13 vs. NDVI10	0.0181	2.699	0.198	No

NDVI-17 vs. NDVI-11	0.0173	2.540	0.284	No
NDVI-12 vs. NDVI-16	0.0162	2.451	0.337	No
NDVI-15 vs. NDVI-13	0.0163	2.432	0.342	No
NDVI-13 vs. NDVI-11	0.0155	2.342	0.400	No
NDVI-18 vs. NDVI-14	0.0154	2.259	0.456	No
NDVI-16 vs. NDVI09	0.0146	2.206	0.486	No
NDVI-15 vs. NDVI-17	0.0146	2.116	0.550	No
NDVI-14 vs. NDVI10	0.0135	2.011	0.626	No
NDVI-17 vs. NDVI-16	0.0132	1.936	0.673	No
NDVI-13 vs. NDVI-16	0.0114	1.722	0.821	No
NDVI-15 vs. NDVI-12	0.0115	1.712	0.812	No
NDVI-14 vs. NDVI-11	0.0109	1.646	0.838	No
NDVI-11 vs. NDVI09	0.0105	1.587	0.857	No
NDVI-18 vs. NDVI-13	0.0107	1.580	0.842	No
NDVI-12 vs. NDVI-14	0.00944	1.425	0.906	No
NDVI-18 vs. NDVI-17	0.00899	1.290	0.944	No
NDVI10 vs. NDVI09	0.00792	1.181	0.962	No
NDVI-14 vs. NDVI-16	0.00680	1.026	0.982	No
NDVI-16 vs. NDVI10	0.00669	0.998	0.979	No
NDVI-17 vs. NDVI-14	0.00636	0.936	0.979	No
NDVI-18 vs. NDVI-12	0.00591	0.870	0.980	No
NDVI-15 vs. NDVI-18	0.00557	0.810	0.978	No
NDVI-12 vs. NDVI-13	0.00483	0.729	0.977	No
NDVI-13 vs. NDVI-14	0.00461	0.696	0.965	No
NDVI-16 vs. NDVI-11	0.00410	0.620	0.954	No
NDVI-12 vs. NDVI-17	0.00308	0.453	0.958	No
NDVI-11 vs. NDVI10	0.00259	0.386	0.910	No
NDVI-17 vs. NDVI-13				

Interpretation for Table S8 and S9: N = Number of observations, Std dev = Standard deviation, SEM = Standard Error Mean, DF = Degree of freedom, SS = Sum of squares,

Table S4. Pearson r correlation statistics of variables for the rainy season (November – April) for the period 2009 -2018

Variables	LAI_{Min}	LAI_{Max}	LAI_{Mean}	LST_{Min}	LST_{Max}	LST_{Mean}	$NDVI_{Min}$	$NDVI_{Max}$	$NDVI_{Mean}$	$NDII_{Min}$	$NDII_{Max}$	$NDII_{Mean}$
LAI_{Min}	**1.00**	-0.02	**0.53**	-0.08	-0.09	-0.11	0.11	0.09	0.10	0.06	0.10	0.08
LAI_{Max}		**1.00**	**0.42**	**-0.35**	**-0.27**	**-0.29**	**0.22**	**0.21**	**0.24**	**0.27**	**0.25**	**0.28**
LAI_{Mean}			**1.00**	**-0.47**	**-0.47**	**-0.49**	**0.37**	**0.30**	**0.35**	**0.37**	**0.32**	**0.35**
LST_{Min}				**1.00**	**0.91**	**0.95**	**-0.73**	**-0.66**	**-0.74**	**-0.74**	**-0.70**	**-0.74**
LST_{Max}					**1.00**	**0.98**	**-0.70**	**-0.69**	**-0.72**	**-0.72**	**-0.68**	**-0.70**
LST_{Mean}						**1.00**	**-0.70**	**-0.67**	**-0.71**	**-0.72**	**-0.68**	**-0.71**
$NDVI_{Min}$							**1.00**	**0.84**	**0.97**	**0.96**	**0.86**	**0.92**
$NDVI_{Max}$								**1.00**	**0.90**	**0.85**	**0.88**	**0.88**
$NDVI_{Mean}$									**1.00**	**0.94**	**0.90**	**0.95**
$NDII_{Min}$										**1.00**	**0.88**	**0.95**
$NDII_{Max}$											**1.00**	**0.95**
$NDII_{Mean}$												**1.00**

Table S5. Pearson r correlation statistics of variables for the dry season (May – October) for the period 2009 -2018

Variables	LAI_{Min}	LAI_{Max}	LAI_{Mean}	LST_{Min}	LST_{Max}	LST_{Mean}	$NDVI_{Min}$	$NDVI_{Max}$	$NDVI_{Mean}$	$NDII_{Min}$	$NDII_{Max}$	$NDII_{Mean}$
LAI_{Min}	**1.00**	**0.43**	**0.78**	**-0.27**	**-0.30**	**-0.28**	**0.66**	**0.76**	**0.69**	**0.73**	**0.77**	**0.77**
LAI_{Max}		**1.00**	**0.72**	0.09	0.12	0.12	**0.31**	**0.44**	**0.33**	**0.40**	**0.56**	**0.45**
LAI_{Mean}			**1.00**	-0.04	-0.02	-0.02	**0.58**	**0.73**	**0.61**	**0.69**	**0.82**	**0.76**
LST_{Min}				**1.00**	**0.97**	**0.99**	**-0.72**	**-0.53**	**-0.73**	**-0.61**	**-0.29**	**-0.57**
LST_{Max}					**1.00**	**0.99**	**-0.73**	**-0.53**	**-0.74**	**-0.62**	**-0.28**	**-0.57**
LST_{Mean}						**1.00**	**-0.72**	**-0.53**	**-0.74**	**-0.61**	**-0.28**	**-0.57**
$NDVI_{Min}$							**1.00**	**0.84**	**0.96**	**0.96**	**0.71**	**0.90**
$NDVI_{Max}$								**1.00**	**0.91**	**0.89**	**0.88**	**0.93**
$NDVI_{Mean}$									**1.00**	**0.94**	**0.76**	**0.95**
$NDII_{Min}$										**1.00**	**0.81**	**0.95**
$NDII_{Max}$											**1.00**	**0.89**
$NDII_{Mean}$												**1.00**

Table S6. Pearson r correlation statistics of variables for the cool-dry season (May – July) for the period 2009 -2018.

Variables	LAI_{Min}	LAI_{Max}	LAI_{Mean}	LST_{Min}	LST_{Max}	LST_{Mean}	$NDVI_{Min}$	$NDVI_{Max}$	$NDVI_{Mean}$	$NDII_{Min}$	$NDII_{Max}$	$NDII_{Mean}$
LAI_{Min}	**1.00**	**0.50**	**0.77**	0.16	0.01	0.14	**0.72**	**0.76**	**0.75**	**0.74**	**0.77**	**0.77**
LAI_{Max}		**1.00**	**0.78**	0.08	0.12	0.13	**0.63**	**0.67**	**0.69**	**0.67**	**0.69**	**0.70**
LAI_{Mean}			**1.00**	0.15	0.16	**0.21**	**0.88**	**0.88**	**0.93**	**0.90**	**0.89**	**0.93**
LST_{Min}				**1.00**	**0.73**	**0.91**	0.05	0.17	0.10	0.06	0.07	0.08
LST_{Max}					**1.00**	**0.91**	0.07	0.12	0.10	0.05	0.06	0.07
LST_{Mean}						**1.00**	0.10	**0.20**	0.15	0.10	0.12	0.13
$NDVI_{Min}$							**1.00**	**0.85**	**0.95**	**0.95**	**0.86**	**0.91**
$NDVI_{Max}$								**1.00**	**0.92**	**0.87**	**0.89**	**0.90**
$NDVI_{Mean}$									**1.00**	**0.94**	**0.92**	**0.97**
$NDII_{Min}$										**1.00**	**0.91**	**0.95**
$NDII_{Max}$											**1.00**	**0.96**
$NDII_{Mean}$												**1.00**

Table S7. Pearson r correlation statistics of variables for the hot-dry season (August – October) for the period 2009 -2018.

Variables	LAI_{Min}	LAI_{Max}	LAI_{Mean}	LST_{Min}	LST_{Max}	LST_{Mean}	$NDVI_{Min}$	$NDVI_{Max}$	$NDVI_{Mean}$	$NDII_{Min}$	$NDII_{Max}$	$NDII_{Mean}$
LAI_{Min}	**1.00**	**0.39**	**0.77**	**0.41**	**0.41**	**0.43**	0.15	**0.37**	0.18	**0.32**	**0.45**	**0.47**
LAI_{Max}		**1.00**	**0.68**	**0.36**	**0.45**	**0.43**	0.17	**0.36**	0.18	**0.32**	**0.48**	**0.46**
LAI_{Mean}			**1.00**	**0.60**	**0.66**	**0.65**	0.15	**0.45**	0.18	**0.41**	**0.66**	**0.64**
LST_{Min}				**1.00**	**0.95**	**0.98**	**-0.31**	0.06	**-0.41**	-0.02	**0.44**	0.12
LST_{Max}					**1.00**	**0.98**	**-0.31**	0.15	**-0.39**	0.01	**0.55**	**0.19**
LST_{Mean}						**1.00**	**-0.32**	0.10	**-0.41**	0.01	**0.51**	0.17
$NDVI_{Min}$							**1.00**	**0.26**	**0.79**	**0.83**	0.06	**0.51**
$NDVI_{Max}$								**1.00**	**0.54**	**0.40**	**0.72**	**0.71**
$NDVI_{Mean}$									**1.00**	**0.62**	0.18	**0.72**
$NDII_{Min}$										**1.00**	**0.36**	**0.67**
$NDII_{Max}$											**1.00**	**0.70**
$NDII_{Mean}$												**1.00**

Table S8: CCR.LM coefficients of estimates and goodness of fit statistics (at 95% confidence level) during the rainy season (November – April). Combined *NDII* and *LST* interaction improved accounting for variations in *LAI* by 14.29 percent but zero percent in the case of *NDVI*.

	LST				***NDII***					**Predictors - *NDII* and *LST***							
	Model		**GFS Cv**		**Model**		**GFS CV**			**Model**							
										LST	***NDII***		**Goodness of fit statistics CV**			**Change**	
Variable	$\hat{\beta}$	*i*	**R^2**	**NMSE**	$\hat{\beta}$	*i*	**R^2**	**NMSE**	**N**	$\hat{\beta}$	$\hat{\beta}$	*i*	**R^2**	**NMSE**	**N**	**Diff. R^2**	**(%)**
LAI	-0.04	3.58	0.21	0.79	2.44	1.84	0.10	0.90	205	-0.05	0.00	3.63	0.24	0.76	205	1.1	14.29
NDVI	-0.01	1.03	0.05	0.50	1.07	0.56	0.91	0.09	205	-0.001	1.00	0.06	0.91	0.09	205	0.00	0.00

Table S9: CCR.LM coefficients of estimates and goodness of fit statistics (at 95% confidence level) for the cool dry season (May – July). The *NDII* and *LST* interaction did not improve accounting for variations in *LAI* and *NDVI*.

	LST				***NDII***					**Predictors - *NDII* and *LST***							
	Model		**GFS Cv**		**Model**		**GFS CV**			**Model**							
										LST	***NDII***		**Goodness of fit statistics CV**			**Change**	
Variable	$\hat{\beta}$	*i*	**R^2**	**NMSE**	$\hat{\beta}$	*i*	**R^2**	**NMSE**	**N**	$\hat{\beta}$	$\hat{\beta}$	*i*	**R^2**	**NMSE**	**N**	**Diff. R^2**	**(%)**
LAI	0.05	0.15	0.02	0.98	4.98	1.18	0.87	0.13	95	0.02	4.99	0.65	0.87	0.13	95	0.00	0.00
NDVI	0.006	0.48	0.001	0.999	0.93	0.59	0.94	0.06	95	0.00	0.93	0.59	0.93	0.04	95	0.00	0.00

Table S10: CCR.LM coefficients of estimates and goodness of fit statistics (at 95% confidence level) for the hot-dry season (August – October). The *NDII* and *LST* interaction significantly improved accounting for variations in *LAI* (112 percent) and *NDVI* (64.58 percent).

	LST				***NDII***					**Predictors - *NDII* and *LST***							
	Model		**GFS Cv**		**Model**		**GFS CV**			**Model**							
										LST	***NDII***		**Goodness of fit statistics CV**			**Change**	
Variable	$\hat{\beta}$	*i*	**R^2**	**NMSE**	$\hat{\beta}$	*i*	**R^2**	**NMSE**	**N**	$\hat{\beta}$	$\hat{\beta}$	*i*	**R^2**	**NMSE**	**N**	**Diff. R^2**	**(%)**
LAI	0.03	0.24	0.35	0.65	3.94	1.48	0.32	0.68	85	0.03	3.17	0.52	0.68	0.32	85	0.36	112
NDVI	-0.004	0.63	0.12	0.88	0.88	0.55	0.48	0.16	85	-0.005	0.90	0.73	0.79	0.21	85	0.31	64.58

Table S11(a). Pettit homogeneity test results during the dry season for the period 2009 - 2018

Variable	Period	Change time	Year	p-value	Alpha level	Conf. Level	Mean from	Mean to	Test decision
LAI_{Min}	2009 - 2018			0.0914	0.05	99%			p > α, H0 accepted
LAI_{Max}	2009 -2018			0.4029	0.05	99%			p > α, H0 accepted
LAI_{Mean}	2009 -2018	Sept	2013	0.0004	0.05	99%	1.25	1.37	p < α, H0 rejected
LST_{Min}	2009 - 2018			0.1761	0.05	99%			p > α, H0 accepted
LST_{Max}	2009 -2018			0.1602	0.05	99%			p < α, H0 rejected
LST_{Mean}	2009 -2018			0.1884	0.05	99%			p > α, H0 accepted
$NDII_{Min}$	2009 - 2018			0.8259	0.05	99%			p > α, H0 accepted
$NDII_{Max}$	2009 -2018	July	2015	0.0005	0.05	99%	-0.03	-0.07	p < α, H0 rejected
$NDII_{Mean}$	2009 -2018			0.2770	0.05	99%			p > α, H0 accepted
$NDVI_{Min}$	2009 - 2018			0.4339	0.05	99%			p > α, H0 accepted
$NDVI_{Max}$	2009 - 2018	July	2015	0.0386	0.05	99%	0.52	0.49	p < α, H0 rejected
$NDVI_{Mean}$	2009 -2018			0.8727	0.05	99%			p > α, H0 accepted

Table S11(b). Mann-Kendall trends test results for the period 2009 - 2018

Variable	Mann-Kendall Statistic(S)	Kendall's Tau	Var (S)	*p-value*	Alpha	Test Interpretation	Nature of Trend
LAI_{Min}	771	0.0076	10757148.33	0.8144	0.05	Accept H0	No trend
LAI_{Max}	-1283	-0.0123	10841214.33	0.6970	0.05	Accept H0	No trend
LAI_{Mean}	1973	0.0187	10849164.33	0.5494	0.05	Accept H0	No trend
LST_{Min}	8642	0.0819	10850159.33	0.0087	0.05	Reject H0	Upward
LST_{Max}	9305	0.0882	10850163.67	0.0047	0.05	Reject H0	Upward
LST_{Mean}	9709	0.092	10850179.67	0.0032	0.05	Reject H0	Upward
$NDII_{Min}$	-5690	-0.0539	10850248.00	0.0842	0.05	Accept H0	No trend
$NDII_{Max}$	-10094	-0.0956	10850248.00	0.0022	0.05	Reject H0	Downward
$NDII_{Mean}$	-5354	-0.0507	10850248.00	0.1041	0.05	Accept H0	No trend
$NDVI_{Min}$	-3448	-0.0327	10850248.00	0.2954	0.05	Accept H0	No trend
$NDVI_{Max}$	-7748	-0.0734	10850248.00	0.0187	0.05	Reject H0	Downward
$NDVI_{Mean}$	-2950	-0.0279	10850248.00	0.3706	0.05	Accept H0	No trend
*Rainfall	-86112	-0.0147	4830751280.00	0.2154	0.05	Accept H0	No trend

**Rainfall: daily values*

Table S11(c). Dry season Mann-Kendall trends test results for the period 2009 - 2018

Variable	Mann-Kendall Statistic(S)	Kendall's Tau	Var (S)	*p-value*	Alpha	Test Interpretation	Nature of Trend
LAI_{Min}	707.0000	0.0289	1326632.3333	0.5399	0.05	Accept H0	No trend
LAI_{Max}	953.0000	0.0372	1354406.3333	0.4133	0.05	Accept H0	No trend
LAI_{Mean}	3177.0000	0.1207	1360617.6667	0.0065	0.05	Accept H0	No trend
LST_{Min}	2611.0000	0.0992	1360599.0000	0.0252	0.05	Reject H0	Upward
LST_{Max}	2524.0000	0.0959	1360599.3333	0.0305	0.05	Reject H0	Upward
LST_{Mean}	2497.0000	0.0949	1360611.6667	0.0324	0.05	Reject H0	Upward
$NDII_{Min}$	-992.0000	-0.0377	1360634.6667	0.3956	0.05	Accept H0	No trend
$NDII_{Max}$	-2719.0000	-0.1033	1360622.3333	0.0198	0.05	Reject H0	Downward
$NDII_{Mean}$	-962.0000	-0.0365	1360634.6667	0.4100	0.05	Accept H0	No trend
$NDVI_{Min}$	-220.0000	-0.0084	1360634.6667	0.8511	0.05	Accept H0	No trend
$NDVI_{Max}$	-2123.0000	-0.0806	1360629.6667	0.0689	0.05	Reject H0	Downward
$NDVI_{Mean}$	-688.0000	-0.0261	1360634.6667	0.5559	0.05	Accept H0	No trend