Table S1. 27 cases of linear models with transformed variables. The performance of these models is automatically tested by StatGraphics Centurion XV software.

Model	*Equation*	*Transformation on Y*	*Transformation on X*
Linear	$y = \beta_0 + \beta_1 x$	none	none
Square root-Y	$y = \left(\beta_0 + \beta_1 x\right)^2$	square root	none
Exponential	$y = e^{(\beta_0 + \beta_1 x)}$	log	none
Reciprocal-Y	$y = (\beta_0 + \beta_1 x)^{-1}$	reciprocal	none
Squared-Y	$y = \sqrt{\beta_0 + \beta_1 x}$	square	none
Square root-X	$y = \beta_0 + \beta_1 \sqrt{x}$	none	square root
Double square root	$y = \left(\beta_0 + \beta_1 \sqrt{x}\right)^2$	square root	square root
Log-Y square root-X	$y = e^{(\beta_0 + \beta_1 \sqrt{x})}$	log	square root
Reciprocal-Y square root-X	$y = \left(\beta_0 + \beta_1 \sqrt{x}\right)^{-1}$	reciprocal	square root
Squared-Y square root-X	$y = \sqrt{\beta_0 + \beta_1 \sqrt{x}}$	square	square root
Logarithmic-X	$y = \beta_0 + \beta_1 \ln(x)$	none	log
Square root-Y log-X	$y = (\beta_0 + \beta_1 \ln(x))^2$	square root	log
Multiplicative	$y = \beta_0 x^{\beta_1}$	log	log
Reciprocal-Y log-X	$y = \dfrac{1}{\beta_0 + \beta_1 \ln(x)}$	reciprocal	log
Squared-Y log-X	$y = \sqrt{\beta_0 + \beta_1 \ln(x)}$	square	log
Reciprocal-X	$y = \beta_0 + \beta_1 / x$	none	reciprocal
Square root-Y reciprocal- X	$y = (\beta_0 + \beta_1 / x)^2$	square root	reciprocal
S-curve	$y = e^{(\beta_0 + \beta_1 / x)}$	log	reciprocal
Double reciprocal	$y = [\beta_0 + \beta / x]^{-1}$	reciprocal	reciprocal
Squared-Y reciprocal-X	$y = \sqrt{\beta_0 + \beta_1 / x}$	square	reciprocal
Squared-X	$y = \beta_0 + \beta_1 x^2$	none	square
Square root-Y squared-X	$y = \left(\beta_0 + \beta_1 x^2\right)^2$	square root	square
Log-Y squared-X	$y = e^{(\beta_0 + \beta_1 x^2)}$	log	square
Reciprocal-Y squared-X	$y = \left(\beta_0 + \beta_1 x^2\right)^{-1}$	reciprocal	square
Double squared	$y = \sqrt{\beta_0 + \beta_1 x^2}$	square	square
Logistic	$y = \dfrac{e^{(\beta_0 + \beta_1 x)}}{\left[1 + e^{(\beta_0 + \beta_1 x)}\right]}$	y/(1-y)	none
Log probit	$y = \varphi(\beta_0 + \beta_1 \ln(x))$	$\varphi^{-1}(y)$ (inv. normal)	log

Table S2. Minimum, mean, maximum, 2.5% and 97.5% HPD thresholds of regression coefficients of Eqs.9-14 derived by the RCV-NLR analysis during calibration (for Eqs.9-12 the regression was made based on Eq.2 using ET_o as dependent variable).

a) Coefficients of Eq.9	**a**	**b**	**c**	**d**	**e**
Min	0.0574	-0.0709	-0.0098	-1.47E-04	-2.54E-05
Mean	0.6552	-0.0193	-2.45E-05	5.34E-06	6.25E-06
Max	1.0019	0.0940	0.0193	9.05E-05	3.09E-05
2.5% HPD threshold	0.3996	-0.0583*	-0.0079	-6.15E-05	-1.18E-05
97.5% HPD threshold	0.9088	0.0190	0.0080	6.16E-05	2.44E-05

b) Coefficients of Eq.10	**a**	**b**	**c**
Min	0.0814	-0.0285	0.0084
Mean	0.3749	-0.0062	0.0760
Max	0.6649	0.0404	0.1462
2.5% HPD threshold	0.1988	-0.0205	0.0352
97.5% HPD threshold	0.5491	0.0087	0.1167

c) Coefficients of Eq.11	**a**	**b**	**c**
Min	0.5197	-0.0285	0.0002
Mean	0.5991	-0.0076	0.0015
Max	0.6927	0.0399	0.0027
2.5% HPD threshold	0.5481	-0.0208	0.0007
97.5% HPD threshold	0.6565	0.0067	0.0023

d) Coefficients of Eq.12	**a**	**b**	**c**
Min	0.4916	-0.1673	-0.1122
Mean	0.5542	0.1737	0.1092
Max	0.6280	0.5741	0.2086
2.5% HPD threshold	0.5139	-0.0691	0.0315
97.5% HPD threshold	0.5974	0.4117	0.1690

e) Coefficients of Eq.13	**a**	**b**	**c**
Min	7.271	14.497	-0.139
Mean	8.323	19.425	0.461
Max	10.834	30.137	1.036
2.5% HPD threshold	7.415	15.865	0.149
97.5% HPD threshold	9.472	23.794	0.811

f) Coefficients of Eq.14	**a**	**b**
Min	0.0087	0.7049
Mean	0.1295	0.7533
Max	0.2375	0.8078
2.5% HPD threshold	0.0655	0.7210
97.5% HPD threshold	0.2005	0.7844

*2.5% and 97.5% thresholds with opposite signs are indicated with red color.

Table S3. Minimum, mean, maximum, 2.5% and 97.5% HPD thresholds of R^2 and RMSE during calibration and validation for the six models (Eqs.9-14) based on RCV-NLR.

	Calibration		Validation	
a) Statistics of Eq.9	**R^2**	**RMSE**	**R^2**	**RMSE**
Min	0.795	0.460	0.684	0.372
Mean	0.848	0.526	0.837	0.550
Max	0.892	0.590	0.925	0.782
2.5% HPD threshold	0.821	0.481	0.769	0.461
97.5% HPD threshold	0.875	0.561	0.906	0.645
b) Statistics of Eq.10	**R^2**	**RMSE**	**R^2**	**RMSE**
Min	0.796	0.462	0.688	0.362
Mean	0.847	0.527	0.840	0.544
Max	0.891	0.591	0.925	0.702
2.5% HPD threshold	0.820	0.484	0.770	0.457
97.5% HPD threshold	0.875	0.563	0.902	0.638
c) Statistics of Eq.11	**R^2**	**RMSE**	**R^2**	**RMSE**
Min	0.795	0.462	0.685	0.357
Mean	0.846	0.527	0.840	0.544
Max	0.891	0.592	0.925	0.703
2.5% HPD threshold	0.820	0.482	0.771	0.459
97.5% HPD threshold	0.875	0.561	0.904	0.641
d) Statistics of Eq.12	**R^2**	**RMSE**	**R^2**	**RMSE**
Min	0.789	0.460	0.665	0.385
Mean	0.843	0.524	0.836	0.542
Max	0.886	0.580	0.924	0.672
2.5% HPD threshold	0.815	0.478	0.771	0.451
97.5% HPD threshold	0.872	0.560	0.904	0.640
e) Statistics of Eq.13	**R^2**	**RMSE**	**R^2**	**RMSE**
Min	0.825	0.384	0.718	0.339
Mean	0.872	0.429	0.866	0.443
Max	0.906	0.468	0.939	0.544
2.5% HPD threshold	0.850	0.402	0.811	0.383
97.5% HPD threshold	0.893	0.454	0.915	0.504
f) Statistics of Eq.14	**R^2**	**RMSE**	**R^2**	**RMSE**
Min	0.820	0.385	0.708	0.345
Mean	0.869	0.435	0.866	0.444
Max	0.905	0.472	0.938	0.542
2.5% HPD threshold	0.845	0.408	0.809	0.377
97.5% HPD threshold	0.892	0.463	0.920	0.508

Table S4. Minimum, mean, maximum, 2.5% and 97.5% HPD thresholds of R^2 and RMSE during OOB and validation procedures for the MRF modelling approach.

	OOB		Validation	
Statistics of MRF	**R^2**	**RMSE**	**R^2**	**RMSE**
Min	0.852	0.342	0.791	0.292
Mean	0.891	0.398	0.894	0.398
Max	0.921	0.442	0.953	0.518
2.5% HPD threshold	0.869	0.365	0.848	0.323
97.5% HPD threshold	0.909	0.430	0.931	0.471

Table S5. Minimum, mean, maximum, 2.5% and 97.5% HPD thresholds of variables' importance expressed as MSE% for the MRF modelling approach.

	Variables' importance expressed as MSE%			
	E_{pan}	**u_2**	**RH**	**T**
Min	78.9	12.0	5.9	4.1
Mean	103.0	20.6	13.6	9.6
Max	125.8	33.1	25.0	18.2
2.5% HPD threshold	88.7	14.7	8.4	5.3
97.5% HPD threshold	117.9	27.2	20.3	14.3

E_{pan}: daily pan evaporation (mm d^{-1}), u_2: daily wind speed at 2 m above ground surface (m s^{-1}), RH: daily relative humidity (%), T: daily temperature (^oC).

Table S6. Minimum, mean, maximum, 2.5% and 97.5% HPD thresholds of slopes and intercepts of the trend lines of observed vs. predicted ET_o values from 1:1 plots estimated for all the validation cases from RCV-NLR analysis (Eqs.9-14b) and MRF analysis.

	Validation	
a) Eq.9	**Slope**	**Intercept**
Min	0.648	0.210
Mean	0.817	1.054
Max	0.968	1.926
2.5% HPD threshold	0.721	0.592
97.5% HPD threshold	0.903	1.548
b) Eq.10	**Slope**	**Intercept**
Min	0.667	0.171
Mean	0.819	1.043
Max	0.975	1.790
2.5% HPD threshold	0.731	0.613
97.5% HPD threshold	0.913	1.547
c) Eq.11	**Slope**	**Intercept**
Min	0.666	0.156
Mean	0.821	1.032
Max	0.977	1.787
2.5% HPD threshold	0.732	0.596
97.5% HPD threshold	0.913	1.540
d) Eq.12	**Slope**	**Intercept**
Min	0.681	0.116
Mean	0.831	0.973
Max	0.985	1.855
2.5% HPD threshold	0.733	0.436
97.5% HPD threshold	0.929	1.464
e) Eq.13	**Slope**	**Intercept**
Min	0.826	-1.183
Mean	0.998	0.017
Max	1.206	0.915
2.5% HPD threshold	0.875	-0.680
97.5% HPD threshold	1.117	0.645
f) Eq.14	**Slope**	**Intercept**
Min	0.821	-1.223
Mean	1.008	-0.042
Max	1.213	0.941
2.5% HPD threshold	0.883	-0.682
97.5% HPD threshold	1.128	0.684
g) MRF	**Slope**	**Intercept**
Min	0.871	-1.424
Mean	1.045	-0.251
Max	1.250	0.788
2.5% HPD threshold	0.922	-0.935
97.5% HPD threshold	1.155	0.432

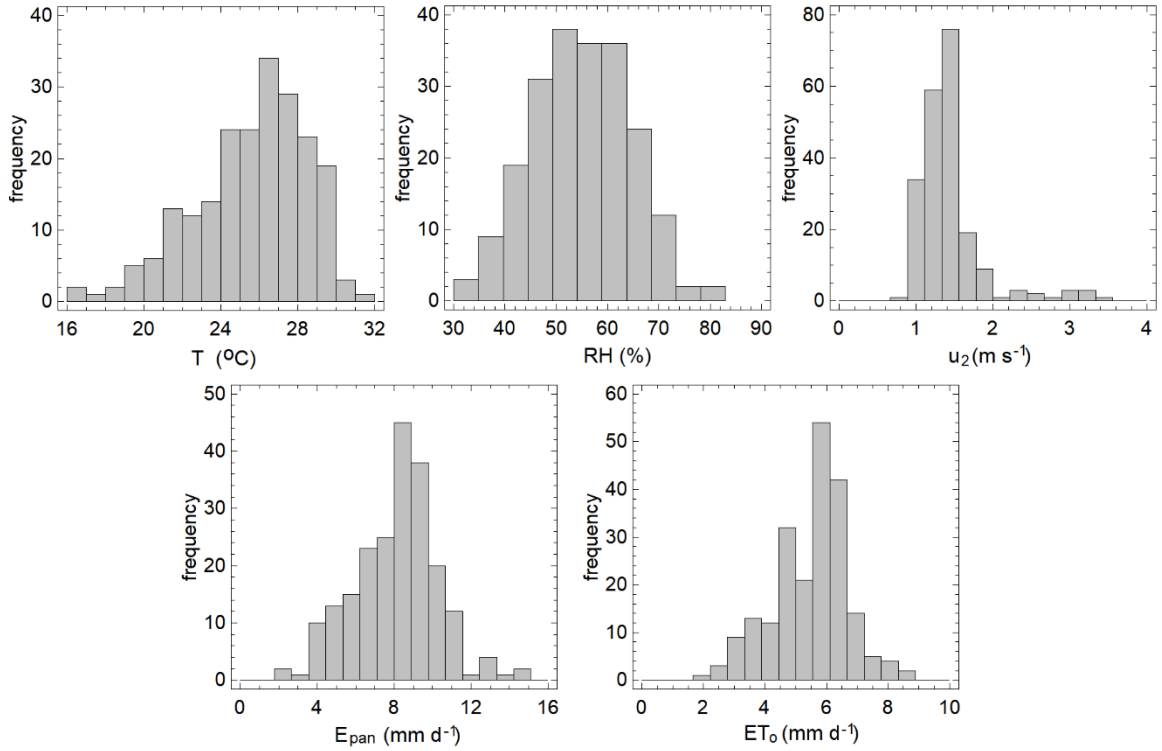

Figure S1. Frequency histograms of the 212 records of T, u_2, RH, E_{pan} and ET_o used in this study.