**Table S1:** Statistical characteristics between original/downscaled and observed monthly TMPs and PRE in the time series (1951–2016). The values shown here are the standard errors at all independent weather stations.

| | Res | $MAE_c$ | $MAE_l$ | $MAE_n$ | $RMSE_c$ | $RMSE_l$ | $RMSE_n$ | $NSE_c$ | $NSE_l$ | $NSE_n$ | $Cor_c$ | $Cor_l$ | $Cor_n$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Minimum TMP (°C) | 30' | 0.074 | | | 0.073 | | | 0.015 | | | 0.001 | | |
| | 10' | 0.053 | 0.066 | 0.073 | 0.077 | 0.066 | 0.073 | 0.023 | 0.016 | 0.014 | 0.000 | 0.001 | 0.000 |
| | 5' | 0.060 | 0.050 | 0.058 | 0.033 | 0.051 | 0.055 | 0.012 | 0.009 | 0.007 | 0.001 | 0.000 | 0.000 |
| | 2.5' | 0.032 | 0.039 | 0.046 | 0.009 | 0.006 | 0.004 | 0.007 | 0.006 | 0.011 | 0.000 | 0.000 | 0.000 |
| | 0.5' | 0.043 | 0.033 | 0.031 | 0.044 | 0.034 | 0.036 | 0.005 | 0.004 | 0.003 | 0.000 | 0.000 | 0.000 |
| Mean TMP (°C) | 30' | 0.072 | | | 0.071 | | | 0.016 | | | 0.000 | | |
| | 10' | 0.054 | 0.066 | 0.071 | 0.049 | 0.066 | 0.066 | 0.011 | 0.017 | 0.020 | 0.000 | 0.000 | 0.000 |
| | 5' | 0.098 | 0.051 | 0.044 | 0.048 | 0.051 | 0.034 | 0.014 | 0.010 | 0.009 | 0.000 | 0.000 | 0.001 |
| | 2.5' | 0.029 | 0.038 | 0.036 | 0.055 | 0.034 | 0.058 | 0.011 | 0.006 | 0.008 | 0.001 | 0.000 | 0.000 |
| | 0.5' | 0.059 | 0.037 | 0.049 | 0.041 | 0.038 | 0.035 | 0.005 | 0.006 | 0.013 | 0.000 | 0.000 | 0.000 |
| Maximum TMP (°C) | 30' | 0.082 | | | 0.081 | | | 0.025 | | | 0.000 | | |
| | 10' | 0.050 | 0.075 | 0.064 | 0.093 | 0.077 | 0.085 | 0.033 | 0.021 | 0.024 | 0.000 | 0.000 | 0.001 |
| | 5' | 0.042 | 0.066 | 0.033 | 0.074 | 0.068 | 0.046 | 0.022 | 0.020 | 0.016 | 0.001 | 0.000 | 0.000 |
| | 2.5' | 0.077 | 0.052 | 0.067 | 0.033 | 0.053 | 0.040 | 0.021 | 0.013 | 0.016 | 0.000 | 0.000 | 0.000 |
| | 0.5' | 0.060 | 0.052 | 0.051 | 0.055 | 0.053 | 0.054 | 0.018 | 0.020 | 0.036 | 0.000 | 0.000 | 0.000 |
| PRE (mm) | 30' | 0.440 | | | 0.691 | | | 0.038 | | | 0.004 | | |
| | 10' | 0.489 | 0.419 | 0.455 | 0.699 | 0.671 | 0.715 | 0.015 | 0.021 | 0.020 | 0.003 | 0.003 | 0.002 |
| | 5' | 0.554 | 0.384 | 0.246 | 0.701 | 0.613 | 0.549 | 0.034 | 0.010 | 0.019 | 0.002 | 0.003 | 0.002 |
| | 2.5' | 0.498 | 0.359 | 0.654 | 0.617 | 0.571 | 0.666 | 0.018 | 0.017 | 0.032 | 0.003 | 0.003 | 0.003 |
| | 0.5' | 0.385 | 0.332 | 0.454 | 0.482 | 0.527 | 0.715 | 0.027 | 0.011 | 0.014 | 0.003 | 0.003 | 0.003 |

Notes: Res indicates the spatial resolution. The subscripts $c$, $l$, and $n$ indicate bicubic, bilinear, and nearest-neighbor interpolations, respectively. The original TMPs and PRE are the 30' CRU data and directly compared with the observed data. Evaluations at 10', 5', 2.5', and 0.5' are the evaluations for the downscaled datasets. MAE, RMSE, NSE, and Cor indicate the mean absolute error, root-mean-square error, Nash–Sutcliffe efficiency coefficient, and correlation coefficient.