

Supplement of Hydrol. Earth Syst. Sci., 23, 1113–1144, 2019  
<https://doi.org/10.5194/hess-23-1113-2019-supplement>  
© Author(s) 2019. This work is distributed under  
the Creative Commons Attribution 4.0 License.



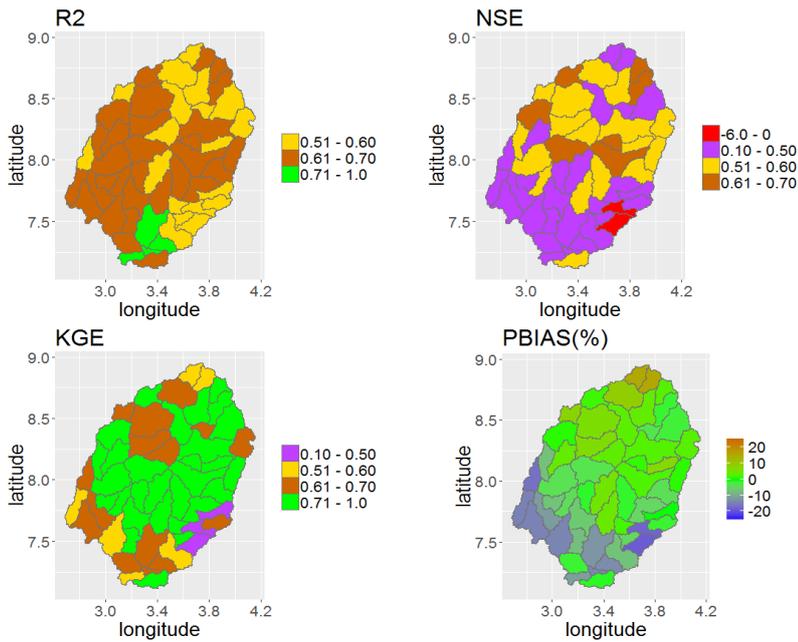
*Supplement of*

## **Multi-site calibration and validation of SWAT with satellite-based evapotranspiration in a data-sparse catchment in southwestern Nigeria**

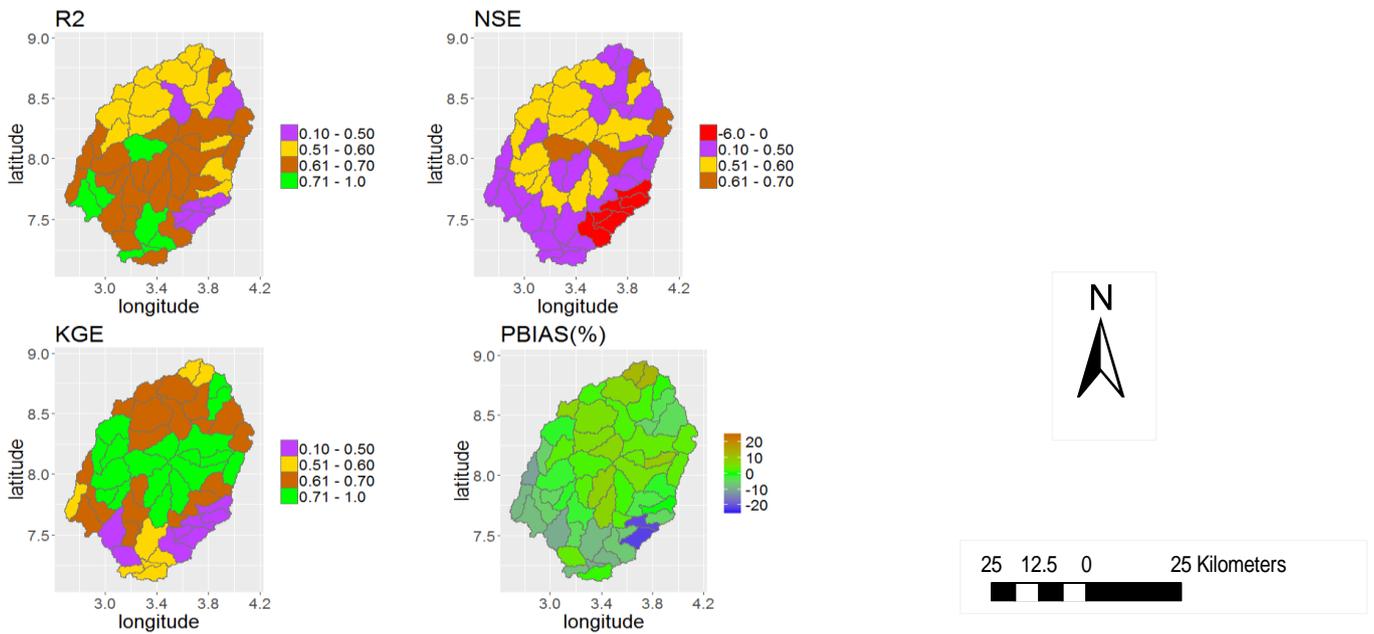
**Abolanle E. Odusanya et al.**

*Correspondence to:* Bano Mehdi ([bano.mehdi@boku.ac.at](mailto:bano.mehdi@boku.ac.at))

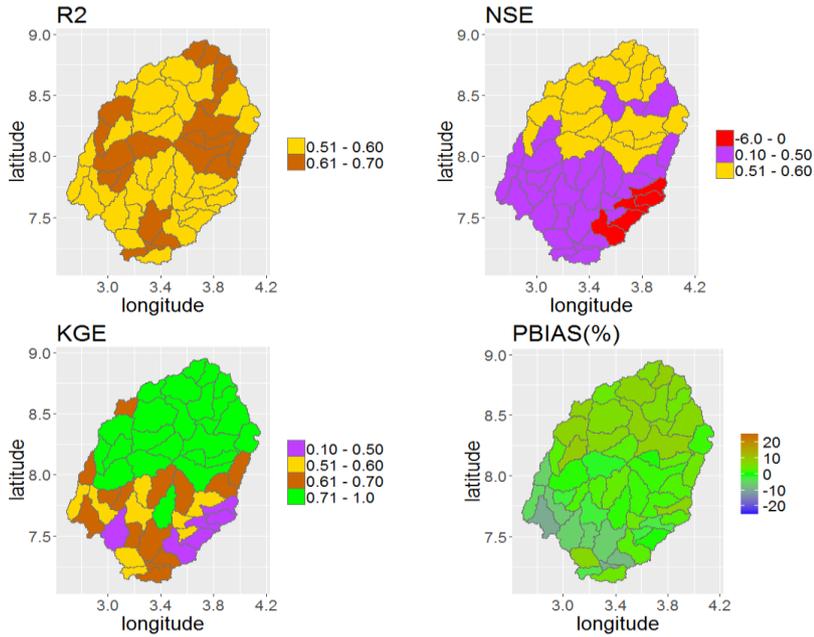
The copyright of individual parts of the supplement might differ from the CC BY 4.0 License.



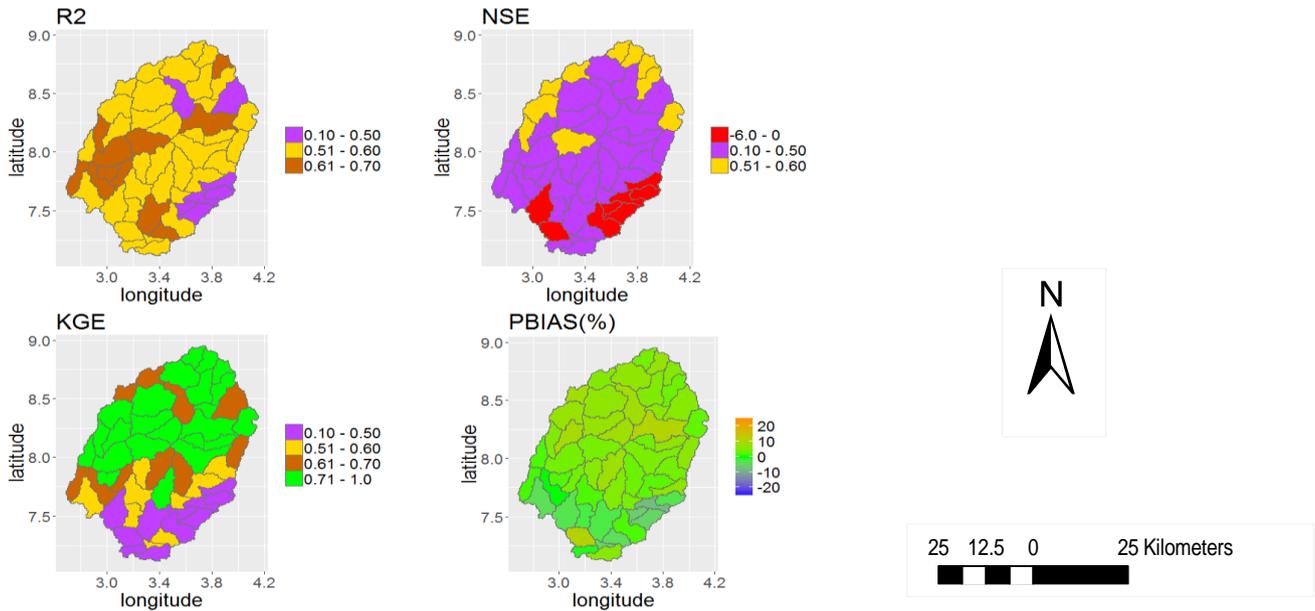
**Figure S1: Performance metrics (NSE, KGE, R<sup>2</sup>, and PBIAS) of SWAT (SWAT\_P-T) when calibrated with GLEAM\_v3.0a (GS2).**



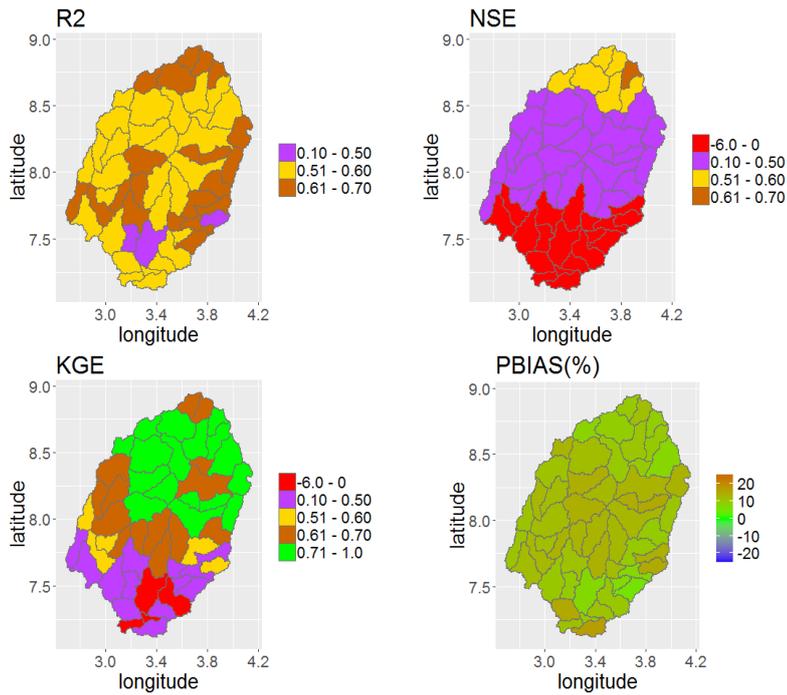
**Figure S2: Performance metrics (NSE, KGE, R<sup>2</sup>, and PBIAS) of SWAT (SWAT\_P-T) when validated with GLEAM\_v3.0a (GS2).**



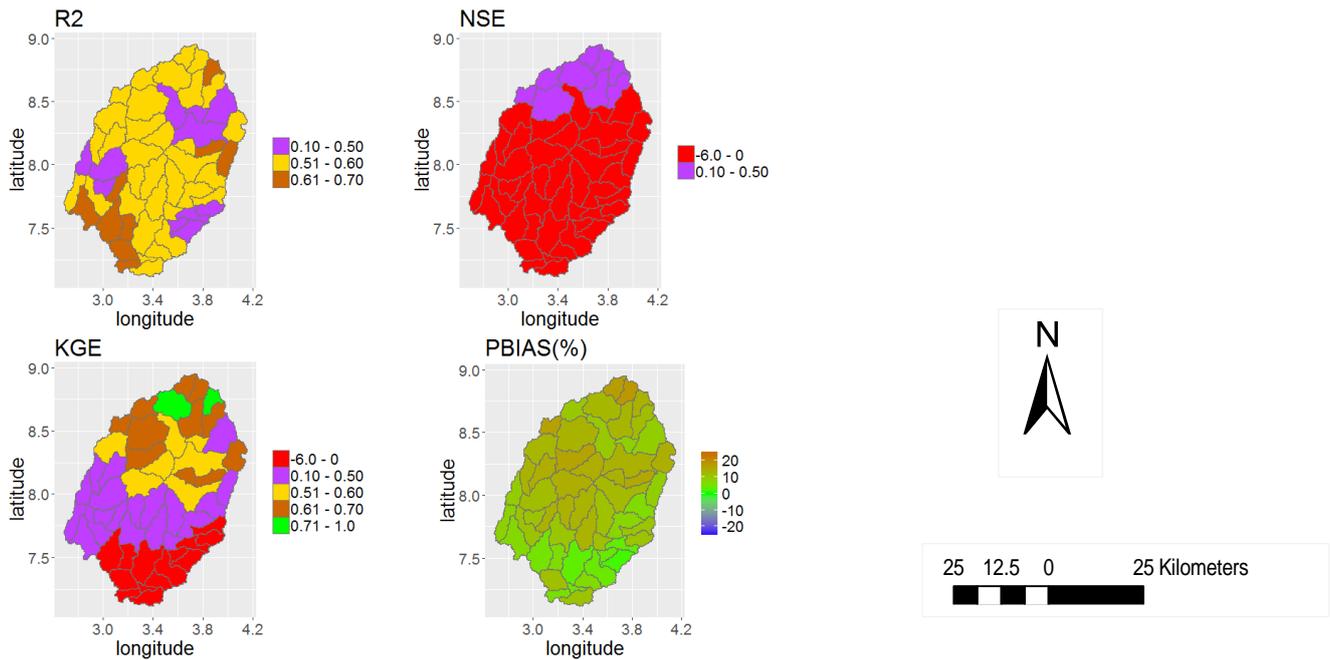
5 **Figure S3: Performance metrics (NSE, KGE, R<sup>2</sup>, and PBIAS) of SWAT (SWAT\_P-M) when calibrated with GLEAM\_v3.0a (GS3).**



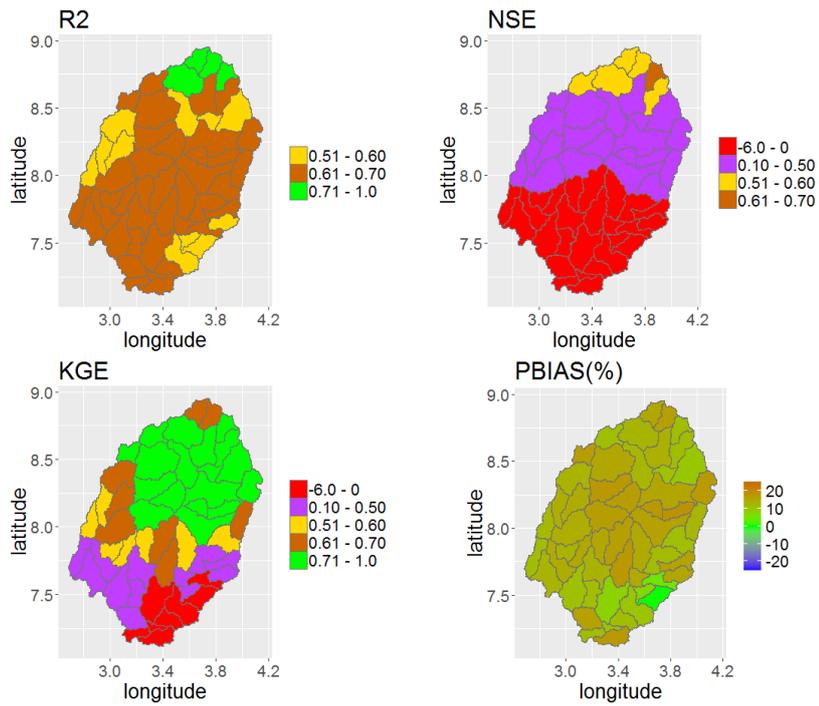
**Figure S4: Performance metrics (NSE, KGE, R<sup>2</sup>, and PBIAS) of SWAT (SWAT\_P-M) when validated with GLEAM\_v3.0a (GS3).**



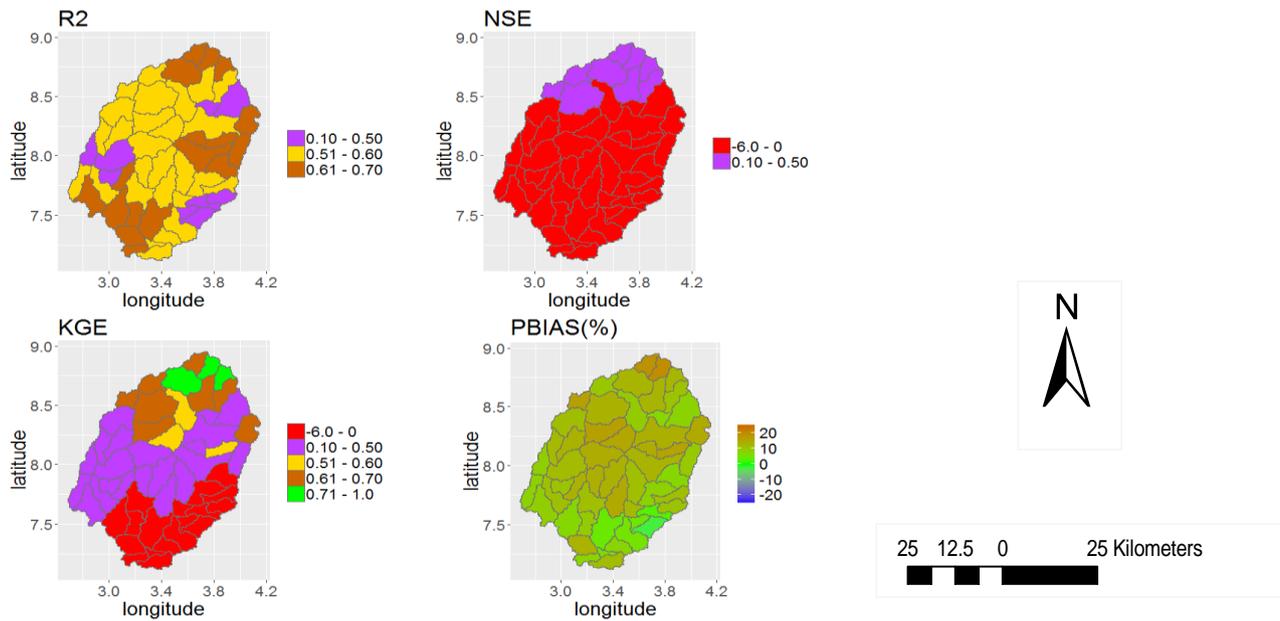
**Figure S5: Performance metrics (NSE, KGE, R<sup>2</sup>, and PBIAS) of SWAT (SWAT\_HG) when calibrated with MOD16 (MS4).**



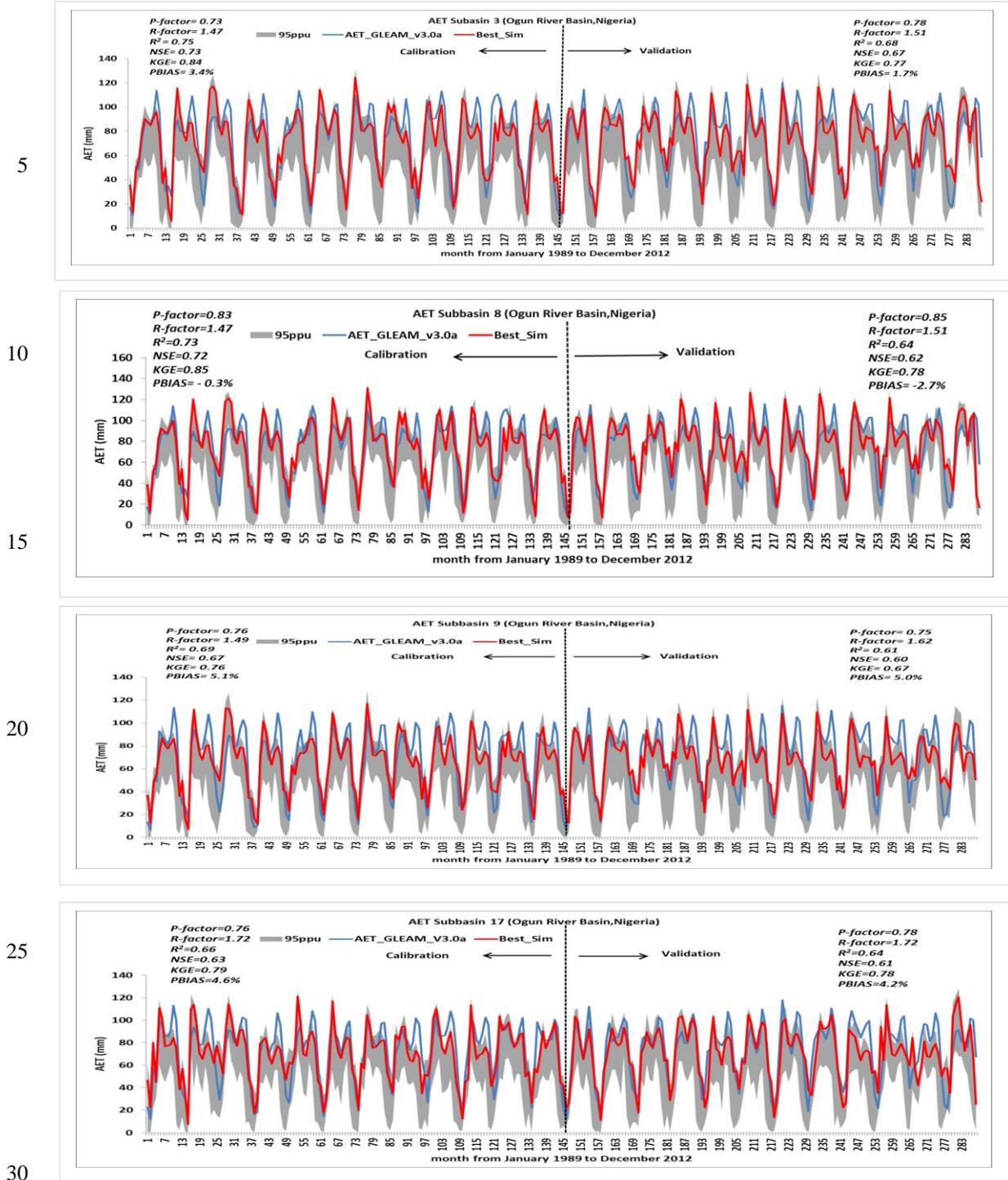
**5 Figure S6: Performance metrics (NSE, KGE, R<sup>2</sup>, and PBIAS) of SWAT (SWAT\_HG) when validated with MOD16 (MS4).**



**Figure S7: Performance metrics (NSE, KGE, R<sup>2</sup>, and PBIAS) of SWAT (SWAT\_P-T) when calibrated with MOD16 (MS5).**

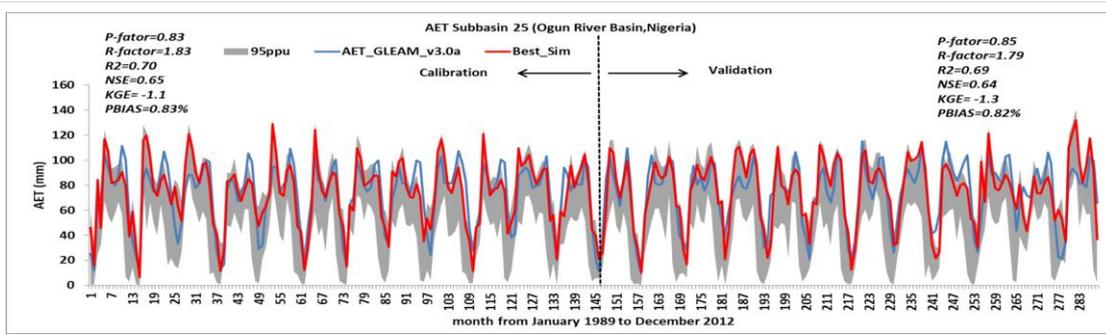


**Figure S8: Performance metrics (NSE, KGE, R<sup>2</sup>, and PBIAS) of SWAT (SWAT\_P-T) when validated with MOD16 (MS5).**

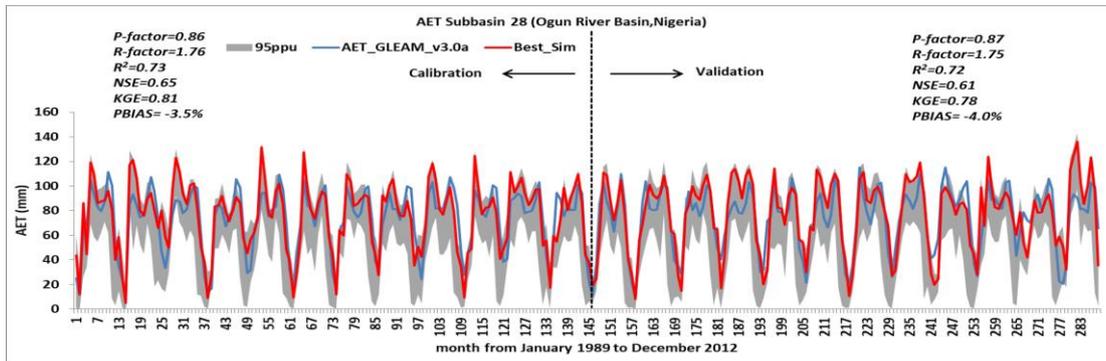


**Figure S9:** Extracts of the monthly calibration and validation results (GSI) for the selected upstream subbasins (with subbasin 17 where the Ikere gorge dam is located) showing the 95% prediction uncertainty interval along with the best SWAT simulated actual evapotranspiration and the satellite based actual evapotranspiration (GLEAM-v3.0a).

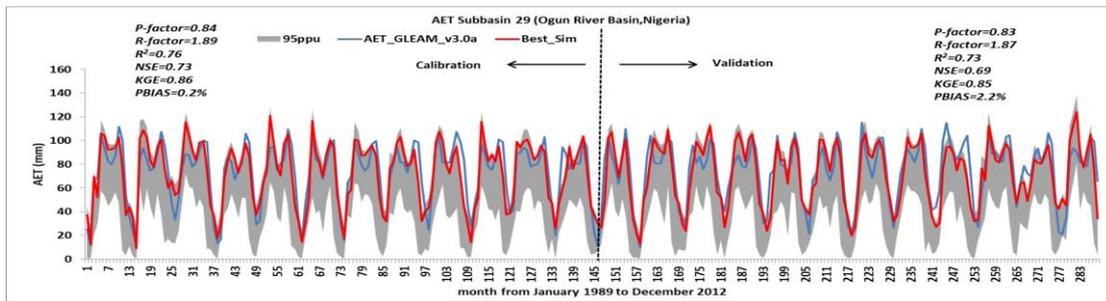
5



10

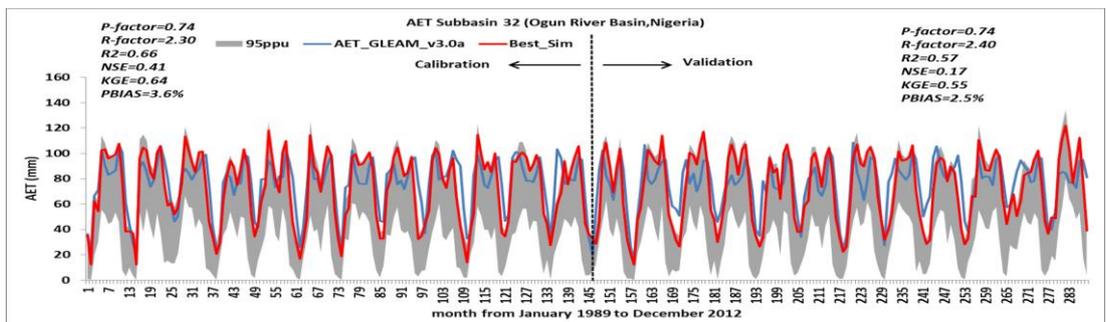


15



20

25

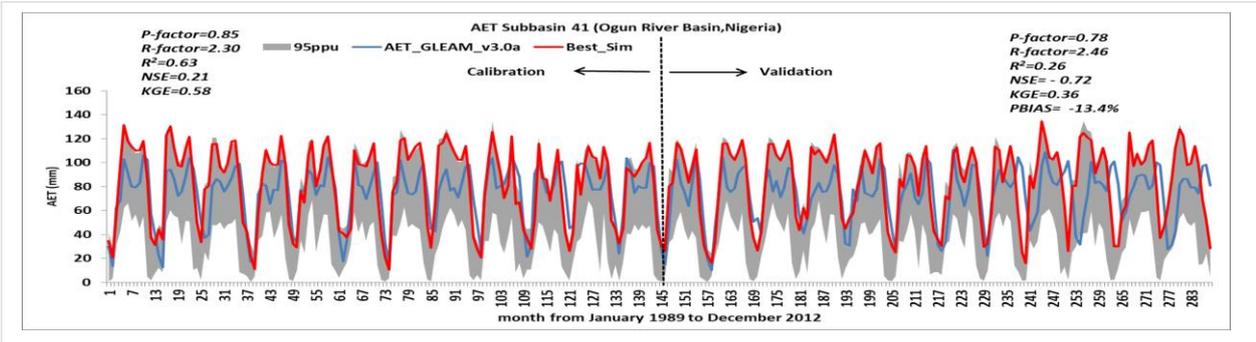


30

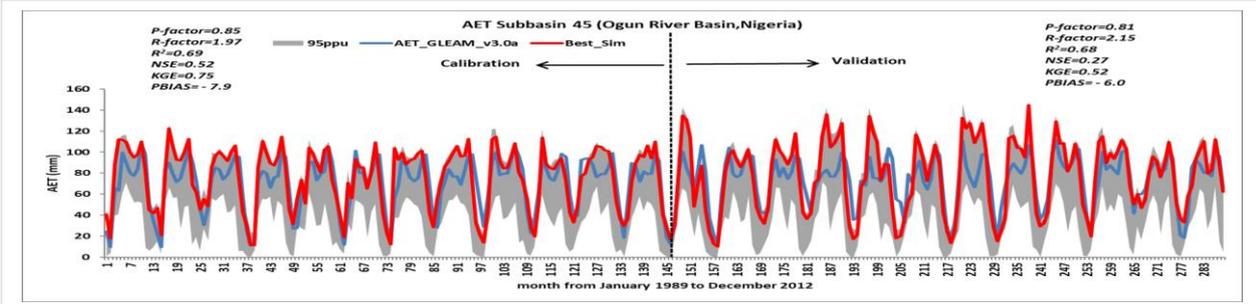
**Figure S10:** Extracts of the monthly calibration and validation results (GSI) for the selected subbasins (located at the middle of the watershed) showing the 95% prediction uncertainty interval along with the best SWAT simulated actual evapotranspiration and the satellite based actual evapotranspiration (GLEAM-v3.0a)

35

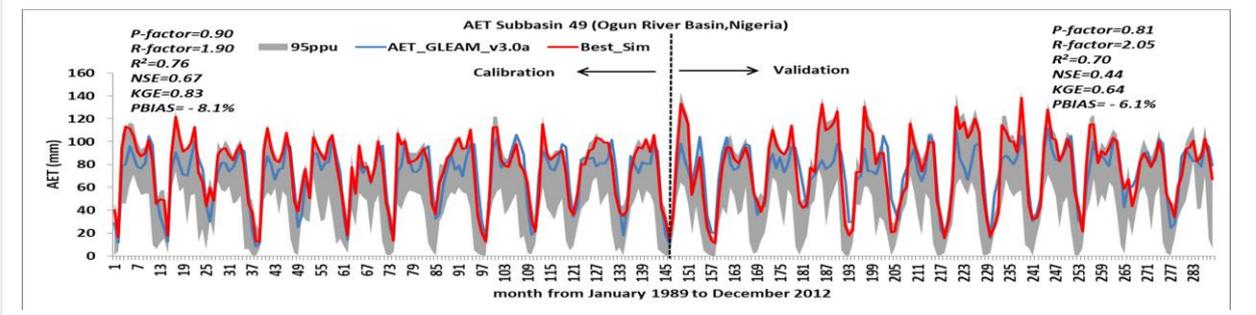
5



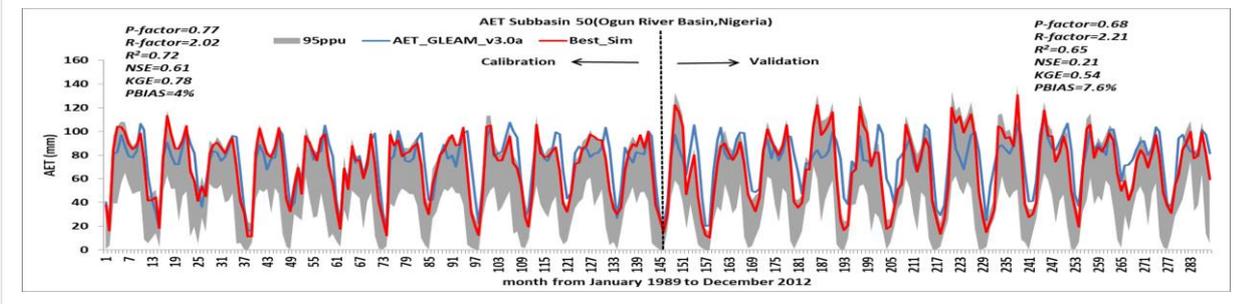
10



15



20



25

30

Figure S11: Extracts of the monthly calibration and validation results (GSI) for the selected downstream subbasins (including subbasin 50 where the Oyan dam is located) showing the 95% prediction uncertainty interval along with the best SWAT simulated actual evapotranspiration and the satellite based actual evapotranspiration (GLEAM-v3.0a).