

1 Article

2 **Improved albedo estimates implemented in the**
 3 **METRIC Model for modeling Energy Balance Fluxes**
 4 **and Evapotranspiration over agricultural and natural**
 5 **areas in the Brazilian Cerrado**

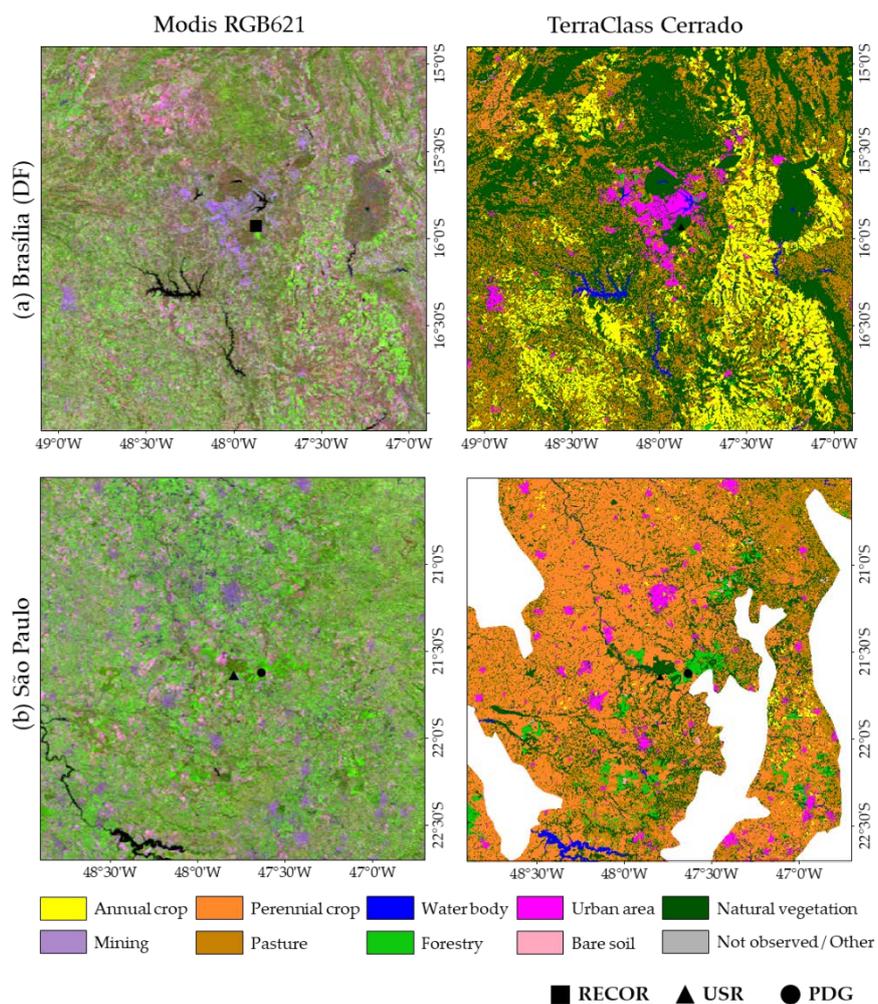
6 **Supplementary Materials**

7 **Table S1.** Selected dates to run METRIC for São Paulo and Distrito Federal study areas.

USR and PDG sites (SP)			RECOR site (DF)				
2005	2006	2007	2011	2012	2013	2014	2015
17/04/2005	06/02/2006	23/02/2007	11/04/2011	09/02/2012	03/01/2013	04/01/2014	09/01/2015
05/05/2005	01/03/2006	31/03/2007	11/05/2011	13/04/2012	11/02/2013	07/02/2014	13/02/2015
04/06/2005	01/04/2006	02/04/2007	21/06/2011	29/04/2012	02/05/2013	26/09/2014	01/04/2015
13/07/2005	24/04/2006	02/05/2007	23/07/2011	02/06/2012	12/06/2013	05/10/2014	16/06/2015
02/08/2005	03/05/2006		17/08/2011	02/07/2012	21/07/2013	29/12/2014	13/07/2015
10/09/2005	02/06/2006		11/09/2011	27/07/2012	24/08/2013		12/08/2015
03/10/2005	04/07/2006		25/10/2011	02/09/2012	25/09/2013		20/09/2015
13/11/2005	20/07/2006		18/11/2011	06/10/2012	14/10/2013		15/10/2015
	06/09/2006			29/10/2012	19/11/2013		09/11/2015
	13/09/2006			20/12/2012			
	29/10/2006						

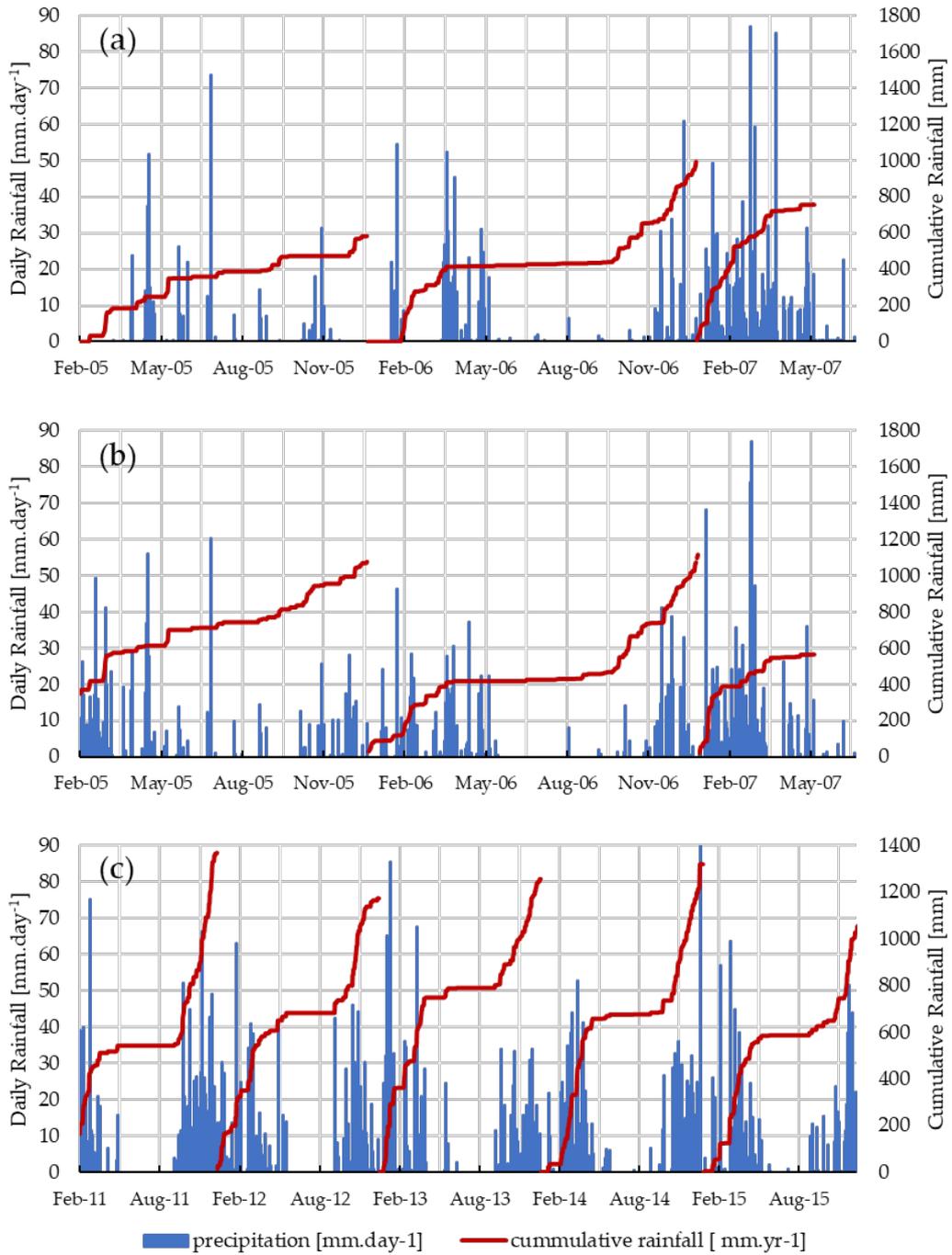
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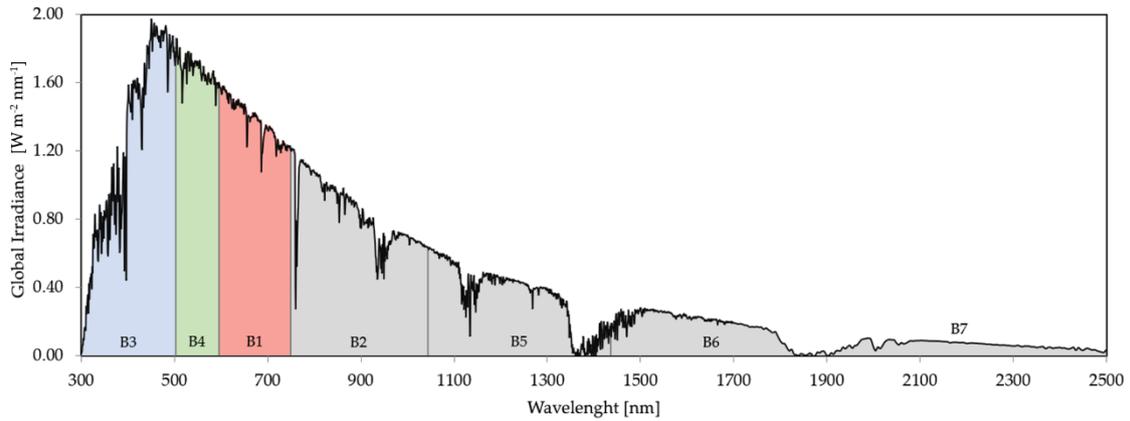
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Figure S1. MODIS RGB621 Image (left) for (a) Federal District and (b) São Paulo areas of interest and respective thematic maps (right) of land cover/land use obtained from TerraClass Cerrado.



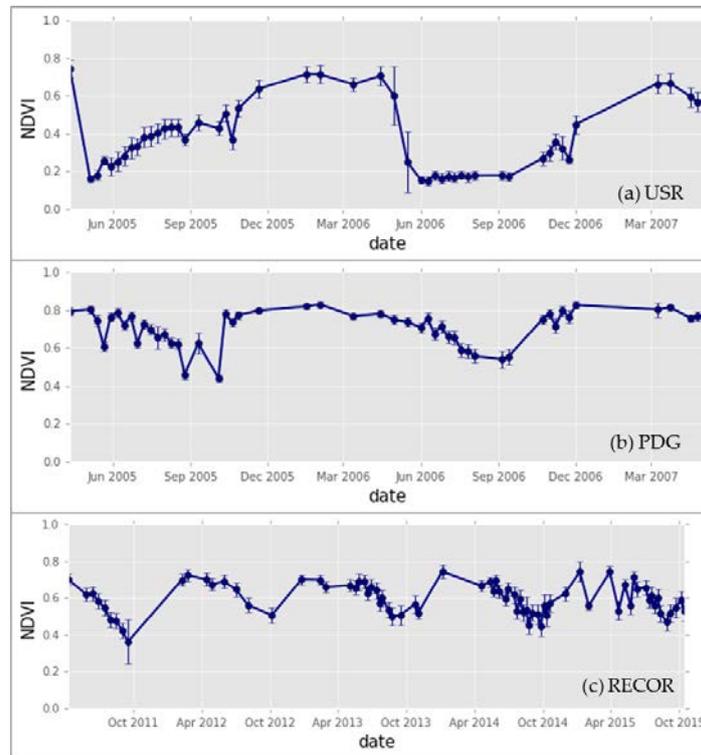
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Figure S2. Daily total rainfall (blue bars) and the cumulative yearly totals (red line) at (a) USR, (b)PDG and (c) RECOR experimental sites.



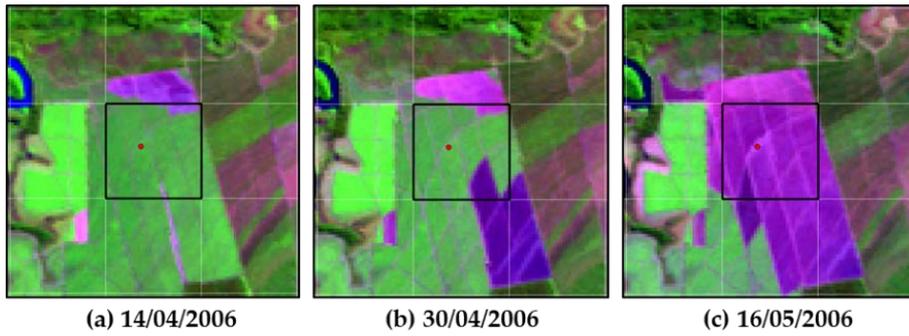
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15 **Figure S3.** Example of Global irradiance [$\text{W m}^{-2} \text{nm}^{-1}$] curve simulated by SMARTS2 model. The
 16 shaded areas below the curve represent the range of each MODIS band.



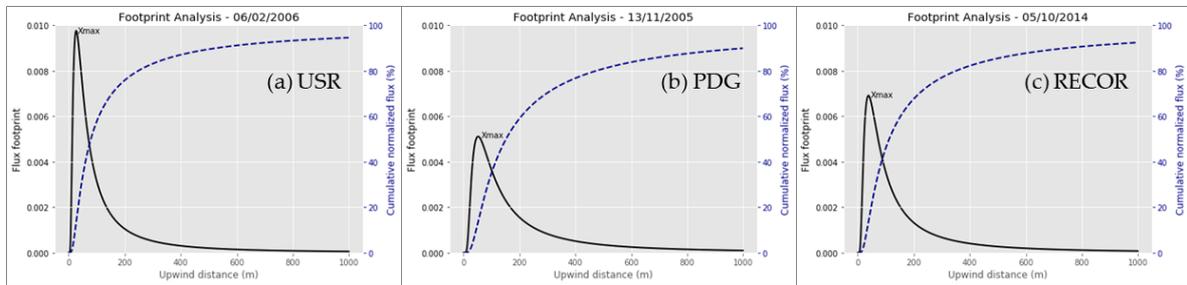
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18 **Figure S4.** Temporal profile of Normalized Difference Vegetation Index (NDVI) for (a) USR, (b) PDG
 19 and (c) RECOR sites, calculated from Landsat-TM, ETM+ and OLI images (Collection 1 – Level 2 –
 20 surface reflectance) inside the 1km pixel corresponding to each experimental site. Vertical bars are the
 21 standard deviation values for each date.



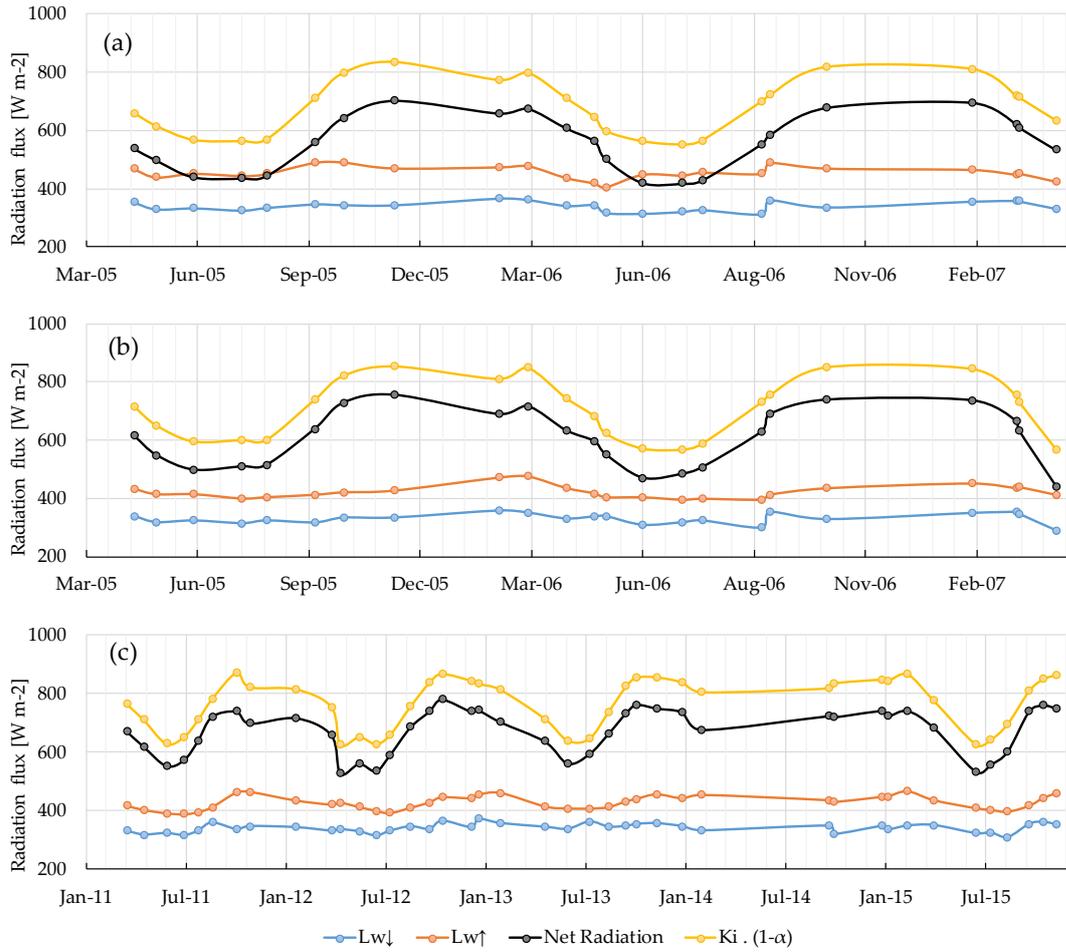
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Figure S5. Color composite from Landsat-TM data (RGB 543 showing the sugarcane harvest during the dry season of 2006 at the USR site. The black square represents one MODIS pixel (1km) and the red point is the USR tower location. (a) Sugarcane ready for harvest around the tower (green); (b) Sugarcane being harvested near the tower (dark purple) and (c) Sugarcane fully harvested at USR tower pixel.



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Figure S6. Footprint representation for typical cloud free days at (a) USR, (b) PDG and (c) RECOR sites during the respective study periods. The black curve is the relative contribution to flux footprint and the blue dashed line is the cumulative normalized flux (%). X_{max} is the peak footprint location.



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Figure S7. Net Radiation components (shortwave and longwave) estimated by METRIC during the study period for (a) USR, (b) PDG and (c) RECOR experimental sites.