fire cci

Universidad de Alcalá · POLITÉCNICA · Max-Planck-Institut für Meteorologie

National Research Council of Italy · CNRS · BROCKMANN CONSULT GmbH

esa

E. Chuvieco, M.L. Pettinari, J. Lizundia-Loiola, G. Otón, A. Khaïroun, M. Tanase, C. Gonzalo, D. Rodríguez, A. García, D. Stroppiana, M. Boschetti, C. Brockmann, T. Storm, M. Böttcher, A. Heil, I. Bouarar, F. Mouillot, W. Chen, P. Ciais

https://climate.esa.int/en/projects/fire

Goal of the project:

Generation of global long-term and properly validated burned area (BA) products to serve the needs of climate modellers.
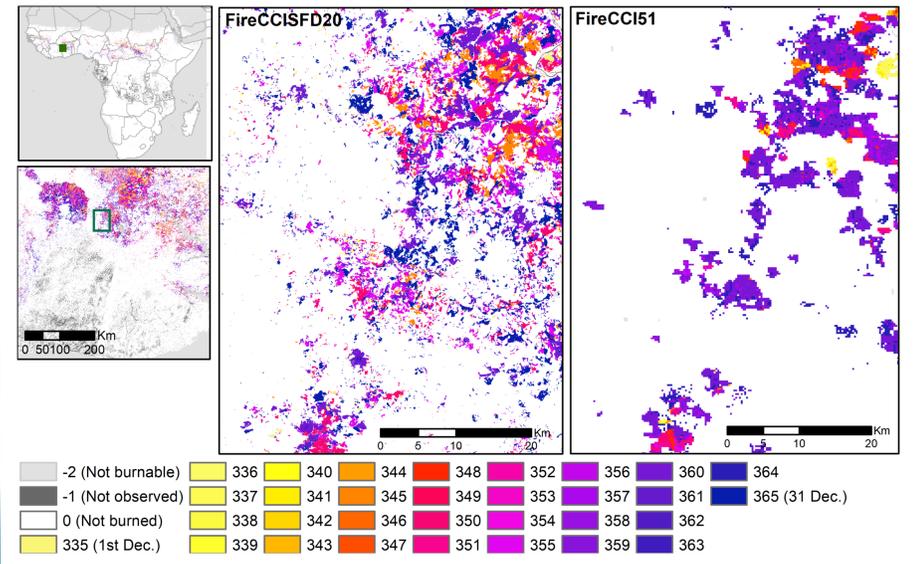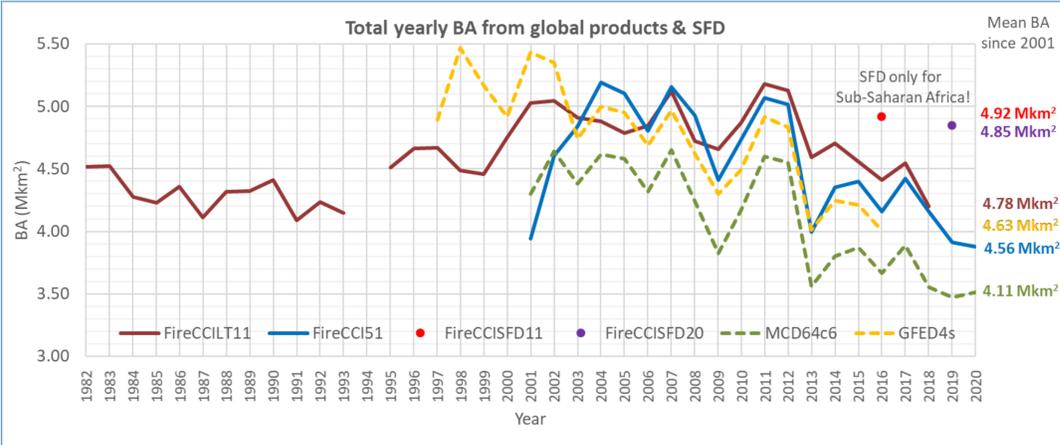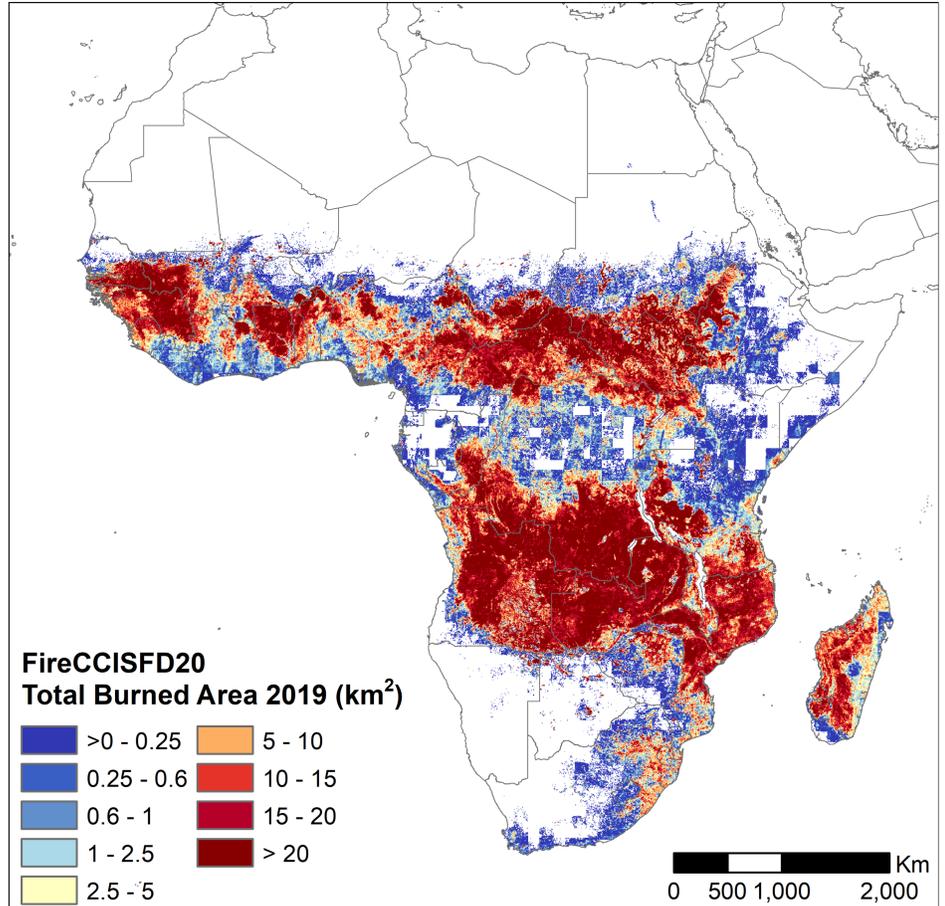
Currently available BA products:

Global

- MODIS FireCCI51: 2001-2019, 250 m & 0.25 degrees
- AVHRR FireCCILT11: 1982-2018, 0.05 & 0.25 degrees (NEW!)

Regional

- Africa: - S-2 MSI FireCCISFD11 (2016), 20m & 0.25 degrees
  - S-2 MSI FireCCISFD20 (2019), 20m & 0.05 degrees (NEW!)
- Africa, Amazon & Indonesia: SAR regional BA products

Total yearly BA from global products & SFD

Mean BA since 2001

SFD only for Sub-Saharan Africa!

4.92 Mkm² · 4.85 Mkm²
4.78 Mkm²
4.63 Mkm²
4.56 Mkm²
4.11 Mkm²

Legend: FireCCILT11 · FireCCI51 · FireCCISFD11 · FireCCISFD20 · MCD64c6 · GFED4s

Fire CCI recent developments
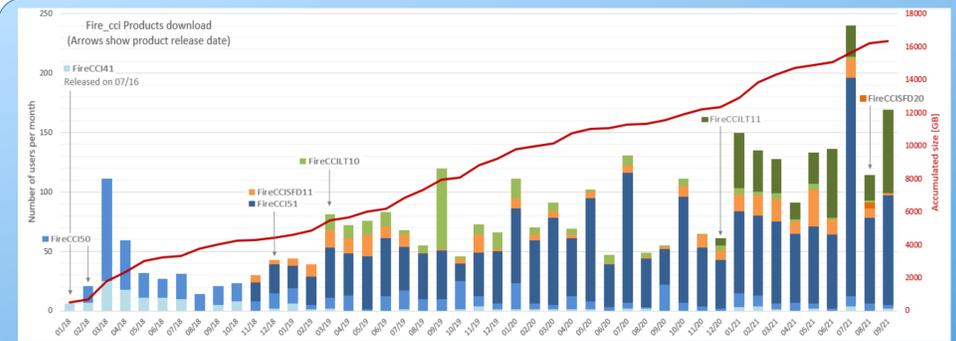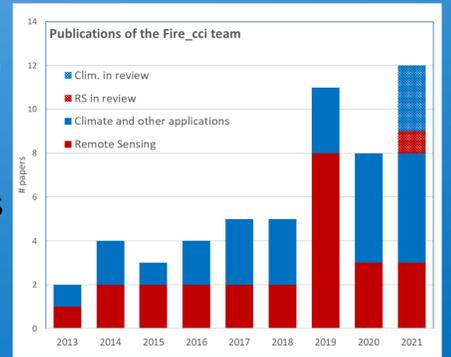
BA product developments:

- Adaptation to S-3 sensors: BA product based on SYN data is being processed for 2019.
- An additional year of the FireCCI51 product (2020) in production.
- A new method for uncertainty characterization has been developed.

Product assessment:

- Impact of uncertainty in biomass burning emissions estimates over Africa.
- Global fire size distribution analysis: FRY v.2 fire patches database.
- Validation of regional products ongoing.

FireCCISFD20
Total Burned Area 2019 (km²)

- >0 - 0.25
- 0.25 - 0.6
- 0.6 - 1
- 1 - 2.5
- 2.5 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- > 20

Km 0 500 1,000 2,000

FireCCISFD20 · FireCCI51

-2 (Not burnable) | -1 (Not observed) | 0 (Not burned) | 335 (1st Dec.) | 336 | 337 | 338 | 339 | 340 | 341 | 342 | 343 | 344 | 345 | 346 | 347 | 348 | 349 | 350 | 351 | 352 | 353 | 354 | 355 | 356 | 357 | 358 | 359 | 360 | 361 | 362 | 363 | 364 | 365 (31 Dec.)

The finer resolution (20m) of the FireCCISFD20 product allows detecting much smaller burned area patches (and hence a larger total BA) compared to medium-resolution sensors (e.g. FireCCI51 at 250m).

Project Impact

- 9 scientific articles published since last Colocation.
- Communications on Fire_cci activities and products presented in 11 scientific events since last Colocation.
- Collaboration with different research institutions and projects (Univ. Batna – Algeria, Australian National University, Univ. Bordeaux & CEFE Montpelier – France, H2020 project FirEUrisk) to perform analysis using FireCCI51, FireCCILT11 and FRY2.0 products.
- Creation of ad-hoc FRY2.0 datasets upon request of several researchers outside the consortium.

Fire_cci Products download
(Arrows show product release date)

FireCCI50 · FireCCI51 · FireCCISFD11 · FireCCILT10 · FireCCILT11 · FireCCISFD20

Publications of the Fire_cci team

- Clim. in review
- RS in review
- Climate and other applications
- Remote Sensing

cci

ESA–ECSAT
Fermi Avenue
Harwell Campus, Didcot, OX11 0FD
United Kingdom
cci.esa.int | @esaclimate

European Space Agency