

# Science questions related to BA mapping



- What is the magnitude of fire impacts?
  - ▣ How much area is burned?
    - Within pixel variability ?
  - ▣ How much biomass is actually consumed?
  
- What are the recent trends in fire activity?
  - ▣ Are fire regimes changing?
  - ▣ What are the contributing factors?  
(Warming, land use change).

# Burned Area and Validation

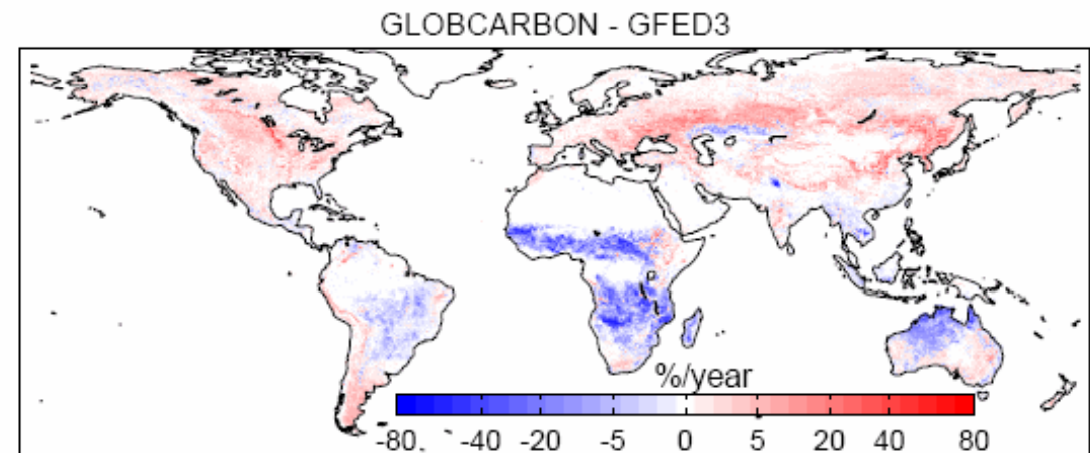
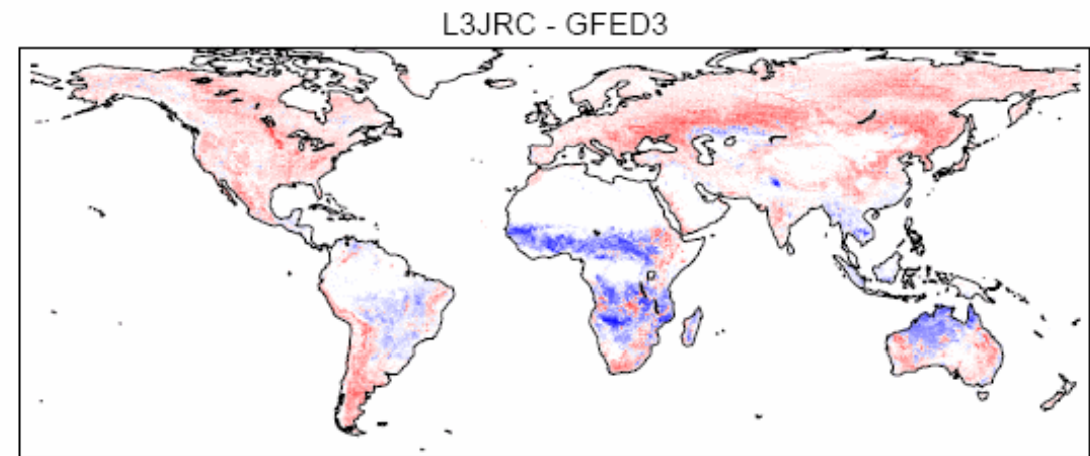
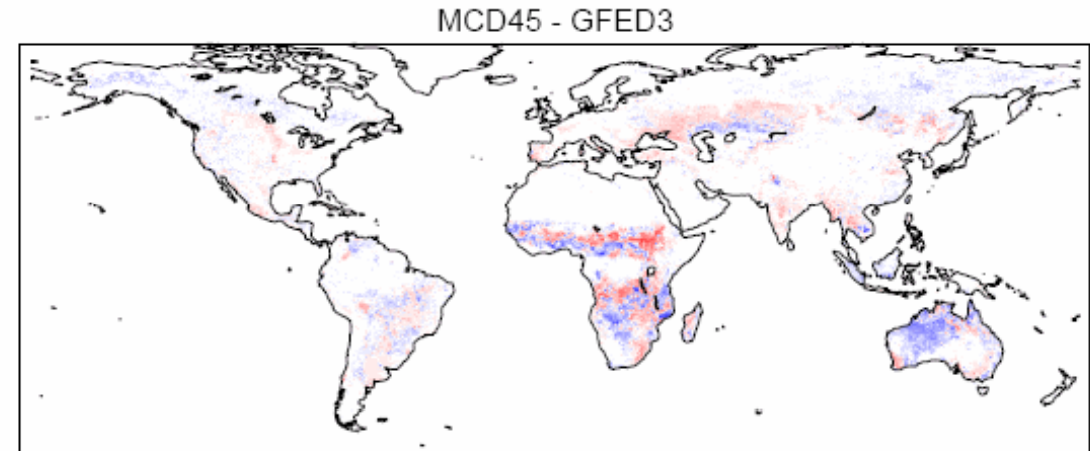
Burned Area Products are getting more mature  
Current tall pole = agricultural fires ?

We can envision another decade of multiple burned area products of varying quality:

- MODIS C6 and CCI in development
- BA Validation Protocol – established (CEOS LPV)
  - Next step on accuracy assessment and reporting ?
- International collection global validation products for C6 and CCI implementation phase ?
- Advocacy needed for Sentinel 3 and VIIRS BA products (CEOS GCOS Template) - continuity products GCOS T36
- Proba-V Burned Area Product – who do we talk to ?

We therefore need to continue efforts to help the user community understand pros and cons of different data sets

# Product intercomparison still needed



% of BA from different satellite  
products

Red: over estimation

Blue: under estimation

(Giglio et al., 2010).

# Product intercomparison



- Selection of metrics.
- Stability and regional trends need to be analyzed.
  - ▣ Merging techniques need to be developed.
  
- CAN THE BEST PRACTICES FOR INTERCOMPARISON BE ARTICULATED

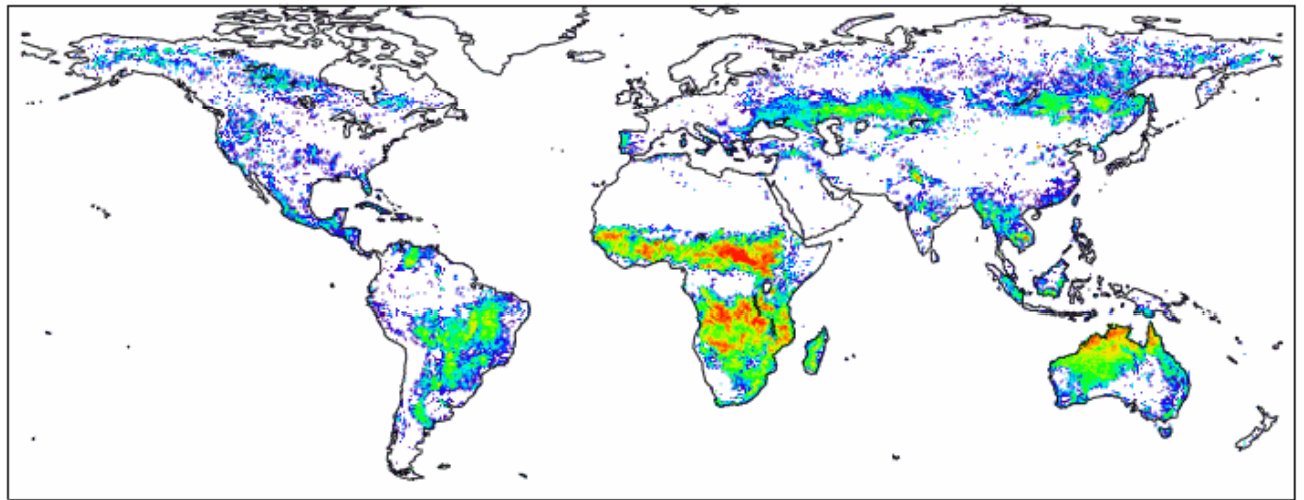
# Validation and uncertainty charact.



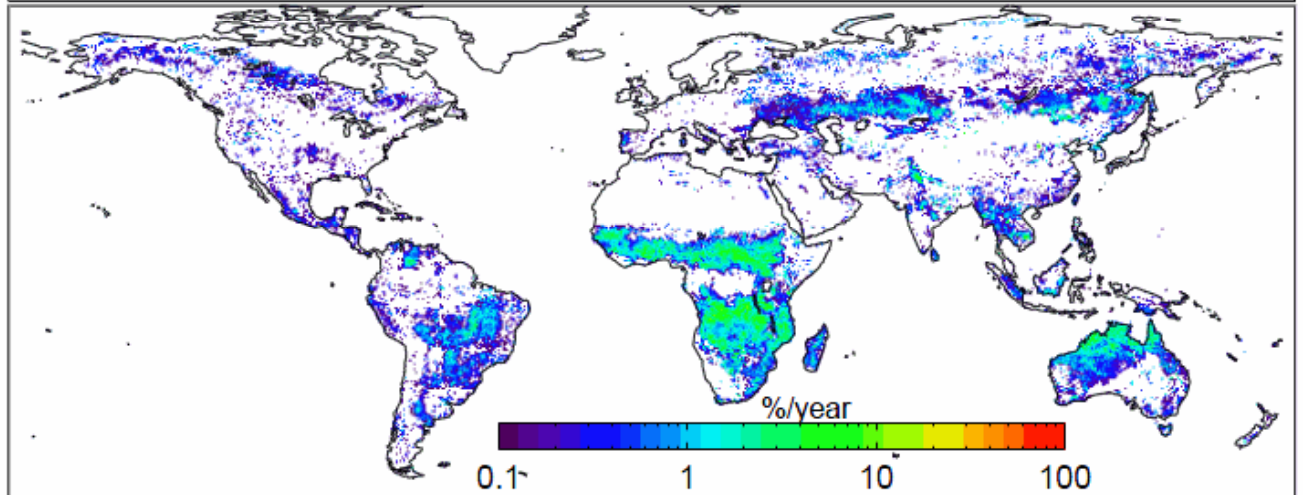
- Review and, eventually, update the fire cci proposal for generating reference files/validation data sets.
- Extend validation to Stages 3 and 4.
- Develop protocol for validation/uncertainty characterization metrics (including MMU impacts).
- Framework for creating a repository of reference files.

# Uncertainty of BA estimation (GFED v3)

Burned area proportion

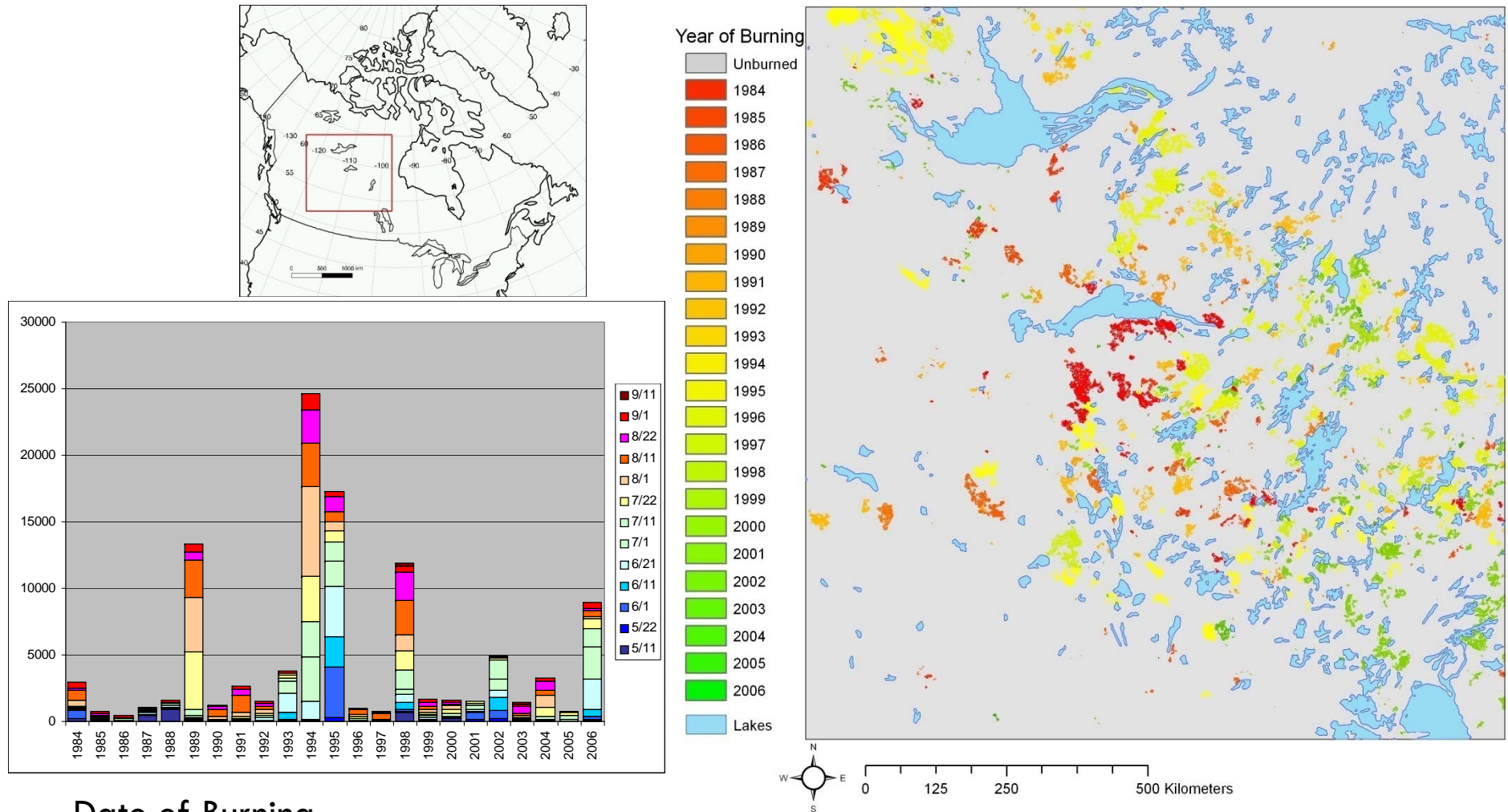


Uncertainty



Giglio, L., J. T. Randerson, G. R. van der Werf, P. S. Kasibhatla, G. J. Collatz, D. C. Morton y R. S. DeFries (2010): Assessing variability and long-term trends in burned area by merging multiple satellite fire products. *Biogeosciences Discuss.*, 7: 1171-1186, doi:10.5194/bg-7-1171-2010

# Long-term BA series



Date of Burning

Chuvieco et al., 2008, RSE

# Long-term BA series



- Foster long-term BA production from HRPT AVHRR archives. GCOS T35 (NOAA Lead)
- An intermediate action from LTDR?



# Towards a 'community' best available data burned area product

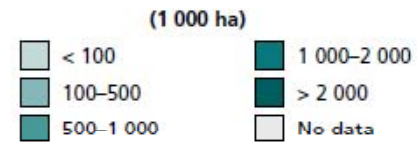
- Encouraging agencies for 'pooled' funded data initiative – ADVOCACY
- Then the Round Robin activity prototyped by Alcala/ESA becomes feasible – and will facilitate data, algorithm and product comparison
- Stage 3 Validation will be feasible
  - LDCM, Sentinel 2 etc
  - Automated methods being prototyped (WELD UMD, Alcala)
- Stage 4 – validation over the LT Record (including current validation data sets (MODIS pre 2003 and CCI 1996- )

Average area of forest annually affected by fire by country, 2005

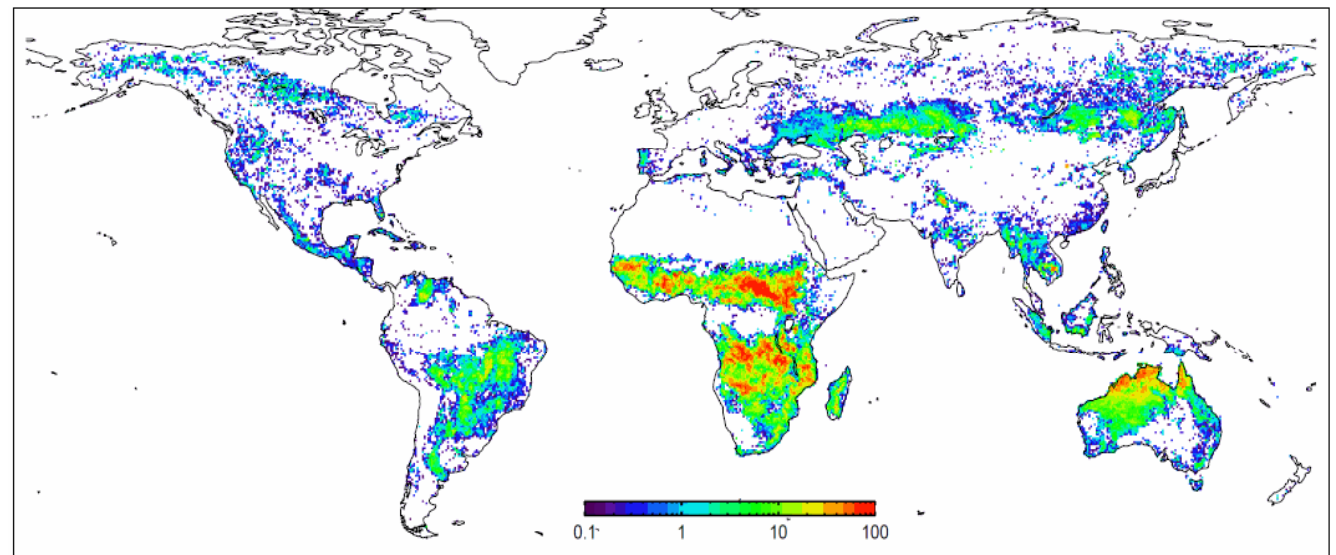
# Outreach



## FRA2010



## GVED v3



# Outreach actions



- Connect to International bodies in charge of fire reporting (FAO, IPCC).
- GOFC-GOLD stand at the COP-16 Durban conference?

# Fire sensor specifications



- Sensor design should be driven by ECV requirements.
- Fire is not only active fires, but also BA mapping and fire danger estimation (fuel loads and moisture content).
- Define sensor requirements to meet GCOS requirements (or other, more justified, modelers needs).