PIXEL PERFECTION FOR CARBON DETECTION

Forest carbon data in high definition

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“An interactive online mapping application of carbon density and loss from aboveground live woody biomass across the tropics from 2001 to 2014, estimated using a combination of ground and medium-resolution satellite data.”

1. Tree cover loss does not always equal deforestation
2. Multiple biomass maps are available for certain regions, see Saatchi et al, Baccini et al., Avitabile et al., Asner et al. and others
3. C stock and C loss estimates may be biased for some countries due to non-statistically based estimators
4. Other C pools are currently excluded from calculations, although default values may be added in the future
5. The inclusion of the time dimension of carbon flux varies both by C pool and by C accounting method
Science: it works whether you believe in it or not.
U.S. scientists officially declare 2016 the hottest year on record. That makes three in a row.
ABOUT WRI | WRI is a global research organization that turns big ideas into action at the nexus of environment, economic opportunity and human well-being.
SIX GOALS, FOUR CENTERS OF EXCELLENCE

- Climate
- Energy
- Food
- Forests
- Water
- Cities

Governance
Finance
Business
Economics
Better forest information. Better forest management.
DATA

Space agencies
National
Regional
Local
Crowd

GLOBAL FOREST WATCH

Make complex data easy to understand, decision-relevant, and in near-real time

USERS

Governments
Business
Civil society
Communities
Educators
A diverse spectrum of users and use cases

- Stakeholders:
  - Global Forest Watch
  - Civil Society
  - Private Sector
  - Government

- Multiple Scales:
  - Community/FMU
  - Global

- Interrelated Issues:
  - Climate
  - Fires
  - Biodiversity
  - Commodities
TARGET USERS

GLOBAL FOREST WATCH CLIMATE

Journalists  NGOs  Donors  Indigenous groups  Businesses

National governments  Everyday citizens

WORLD RESOURCES INSTITUTE
Different Land Use Processes + Fluxes occur differently for each process + “Natural” forest sink

Changes in land use

*Emphasis on forests*

- Changes in area
- Croplands (clearing and abandonment)
- Pastures
- Shifting cultivation
- Changes in carbon stocks (C/ha) within forests
  - Wood harvest & recovery
  - Fire management

This is the only thing that gets reported.

Global results for approximately 1990 (PgC and PgC/yr)

Land use and flux graphics: Woods Hole Research Center
Global Uncertainty
National Uncertainty – Indonesia as a case study

![Graph showing GHG emissions from different sources in Indonesia from 2000 to 2012. The graph compares emissions from MoE 2009, MoF + CIFOR 2014, BPREDD+ 2015, INCAS 2015, BAPPENAS 2015, and MoEF 2016. The data is presented in Mt CO2e yr⁻¹.](image)
COP21 MAJOR OUTCOMES

- **STRENGTHEN CLIMATE ACTIONS**
  - every 5 years

- **LONG-TERM GOAL**
  - for net zero carbon this century

- **ENHANCED TRANSPARENCY** and accountability

- **ADAPTATION**
  - to help most vulnerable

- **FINANCIAL SUPPORT**
  - especially for least developed countries
UNFCCC’S 2018 “GLOBAL STOCKTAKE” UNDER THE PARIS AGREEMENT

• “Collective moment of review” every five years, beginning in 2023, also a “facilitative dialogue” to take stock in 2018
• Informed by science, progress made in implementation, assess how far is left to go, what opportunities exist for enhanced action
• develop a list of existing information sources, including national reports, reports from UNFCCC subsidiary bodies and scientific inputs (i.e. the IPCC special reports).
climate.globalforestwatch.org
CHALLENGES

- Research timelines ≠ operational timelines
- Striking the right balance between global and local
- Forest monitoring for what?
- Critics – nothing’s perfect
- Climate change not “urgent”; global carbon cycle science “too wonky”
- Long-term funding questions
GFW: Convener, commissioner, distributor
## Mapping data requirements onto outcomes

<table>
<thead>
<tr>
<th>Outcome 1</th>
<th>Outcome 2</th>
<th>Outcome 3</th>
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<tr>
<td>Alignment on global goals and how we measure progress</td>
<td>Advocacy, civil action, enforcement to protect forests</td>
<td>Use of data to inform sustainable land use</td>
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### Requirements

- Detect tree cover loss consistently
- Detect tree cover loss in near real-time
- Differentiate natural tree cover loss from planted/harvested trees
- Monitor tree recovery/regrowth
- Monitor tree recovery/regrowth
- Monitor land cover and land cover change

### Principles

- Accuracy/Credibility
- Repeatability
- Timeliness
- Transparency
- Longevity
“We are drowning in information, while starving for wisdom. The world henceforth will be run by synthesizers, people able to put together the right information at the right time, think critically about it, and make important choices wisely.”