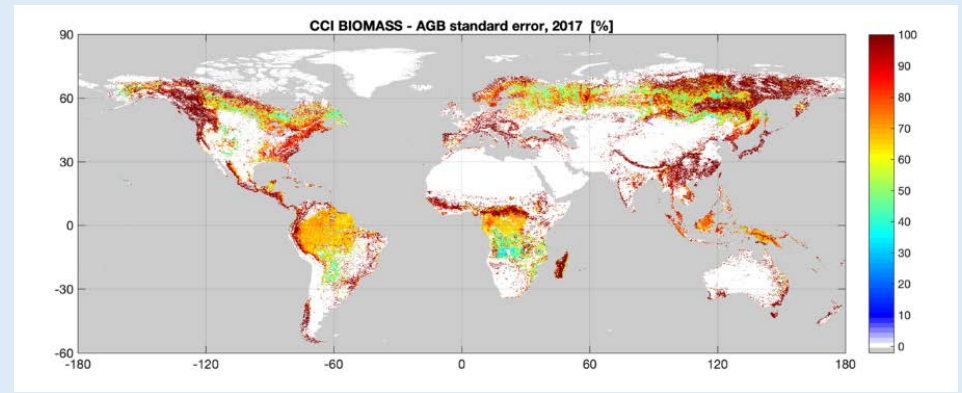
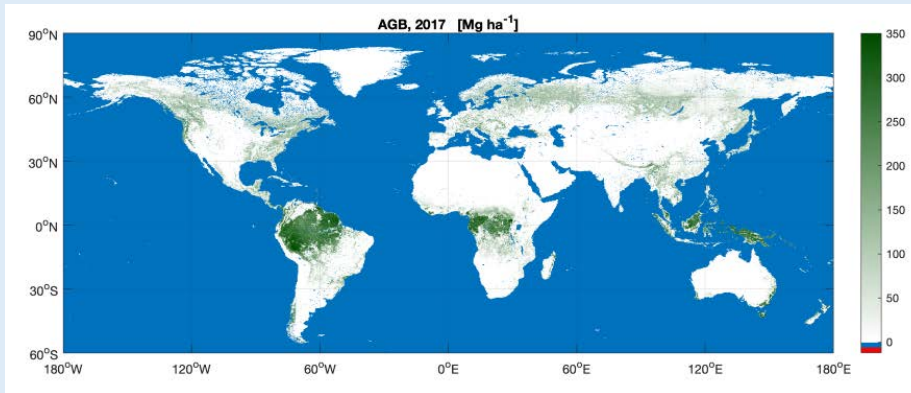


Current status: release of Version 2 products: Global Maps of Above-ground biomass in Mg ha⁻¹ at 100 m resolution for 2010, 2017 & 2018, each with associated Standard error.



Overview of Biomass CCI+

Above-ground biomass (AGB, units: Mg ha⁻¹) is defined by the Global Carbon Observing System (GCOS) as one of 50 Essential Climate Variables (ECV). It is a critical component of the Earth System as changes impact on surface energy budgets and land surface water balances, influencing the concentration of greenhouse gases in the atmosphere and impacting on ecosystem services. The CCI+ Biomass project has produced 3 global maps of AGB, which align with the requirements of GCOS. Year 3 of the project will focus on the production and validation of change products.

Role of biomass in global carbon cycle as both a sink and a source of carbon

Sources



34.1 ± 1.7 Gt CO₂ yr⁻¹ (91%)



3.5 ± 1.8 Gt CO₂ yr⁻¹ (9%)

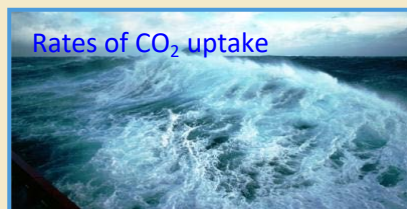
Partitioning

Growth rate of CO₂



16.4 ± 0.4 Gt CO₂ yr⁻¹ (44%)

Rates of CO₂ uptake



9.7 ± 1.8 Gt CO₂ yr⁻¹ (26%)



11.5 ± 3.1 Gt CO₂ yr⁻¹ (31%)

Storage reservoir

- Excess atmospheric carbon absorbed by plants
- Delivers input to soil carbon pools

Land use and management

- Highly sensitive

Climate

- Vulnerable to change and disturbances
- Controls biophysical climate effects

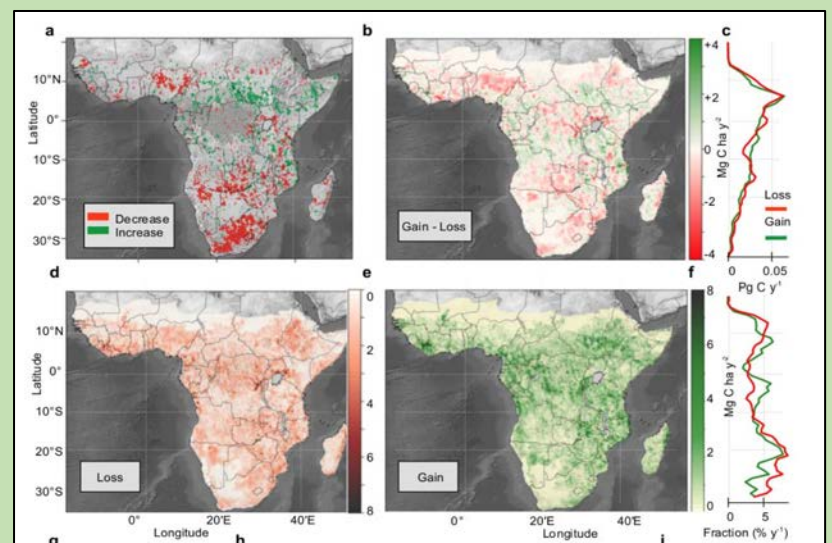
Partly controls fire emissions

- As a function of fuel load

Policy Requirements for Biomass

The Paris Agreement and its 5-year cycle of global stock taking is a major stakeholder for work that characterizes biomass changes over time in the context of:

- The National Determined Commitments (better understanding of sub-decadal and decadal variability of the carbon cycle)
- A more robust and transparent reporting across all facets of reporting in the UNFCCC
- Overall reliance of natural sinks for climate mitigation
- Carbon-Climate feedbacks, hot spots, and tipping points, ecosystem collapse (Governments request).



Changes of AGB in Africa during 2010-2016 (Brandt *et al.* (2018; *Nature Ecology Evolution*))