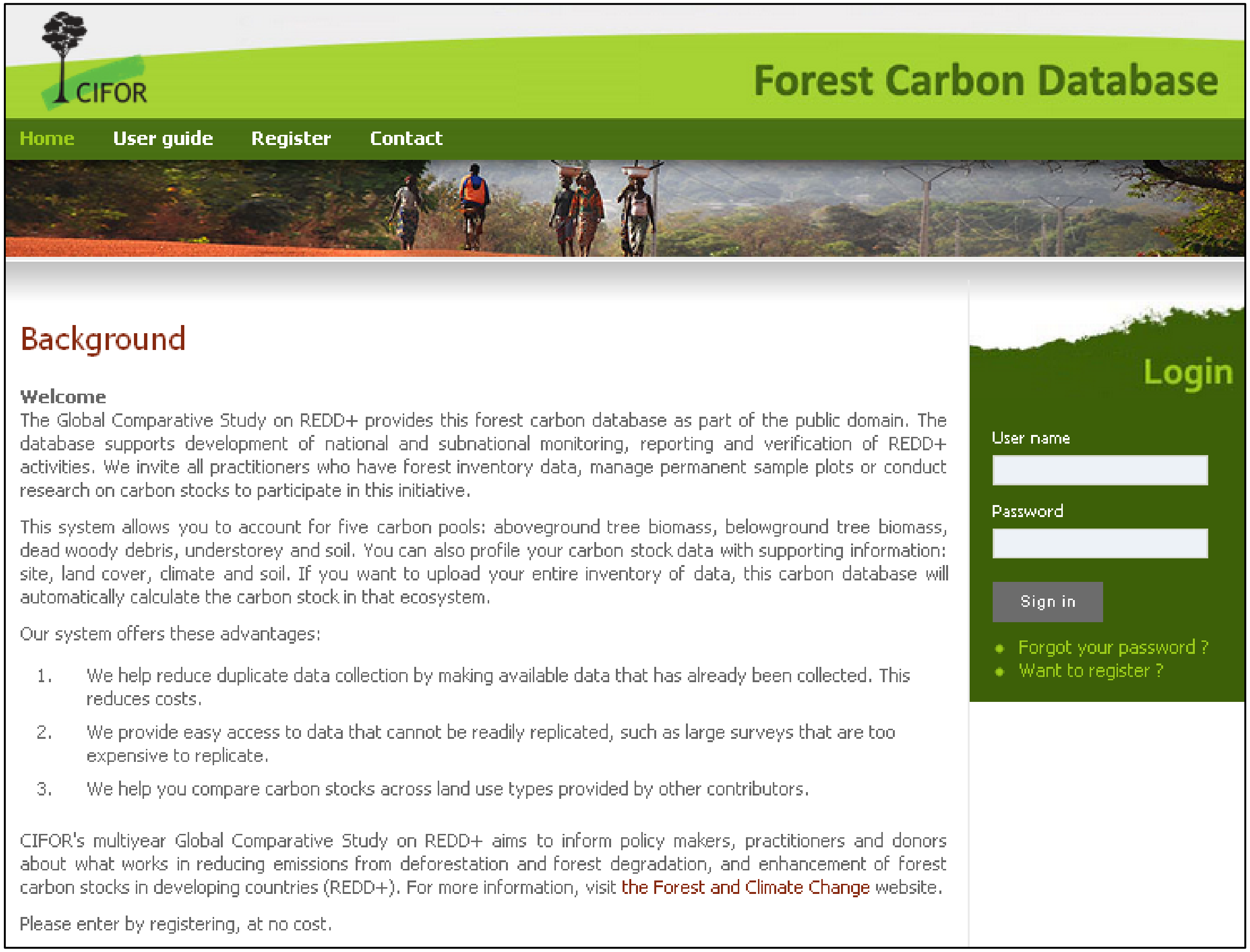
ForestCDB



CIFOR

Forest Carbon Database

Home User guide Register Contact

Background

Welcome

The Global Comparative Study on REDD+ provides this forest carbon database as part of the public domain. The database supports development of national and subnational monitoring, reporting and verification of REDD+ activities. We invite all practitioners who have forest inventory data, manage permanent sample plots or conduct research on carbon stocks to participate in this initiative.

This system allows you to account for five carbon pools: aboveground tree biomass, belowground tree biomass, dead woody debris, understorey and soil. You can also profile your carbon stock data with supporting information: site, land cover, climate and soil. If you want to upload your entire inventory of data, this carbon database will automatically calculate the carbon stock in that ecosystem.

Our system offers these advantages:

1. We help reduce duplicate data collection by making available data that has already been collected. This reduces costs.
2. We provide easy access to data that cannot be readily replicated, such as large surveys that are too expensive to replicate.
3. We help you compare carbon stocks across land use types provided by other contributors.

CIFOR's multiyear Global Comparative Study on REDD+ aims to inform policy makers, practitioners and donors about what works in reducing emissions from deforestation and forest degradation, and enhancement of forest carbon stocks in developing countries (REDD+). For more information, visit the Forest and Climate Change website.

Please enter by registering, at no cost.

Login

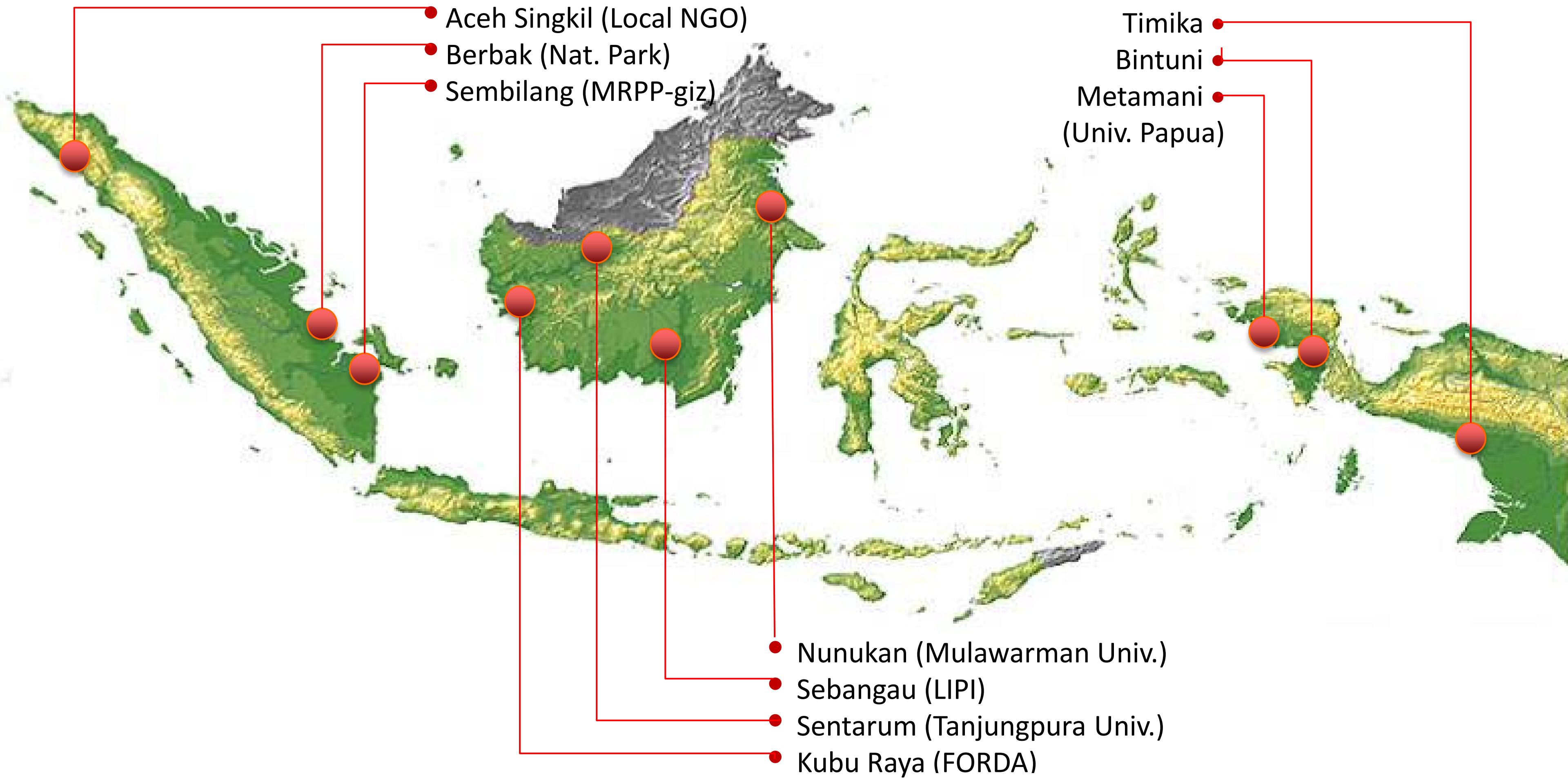
User name

Password

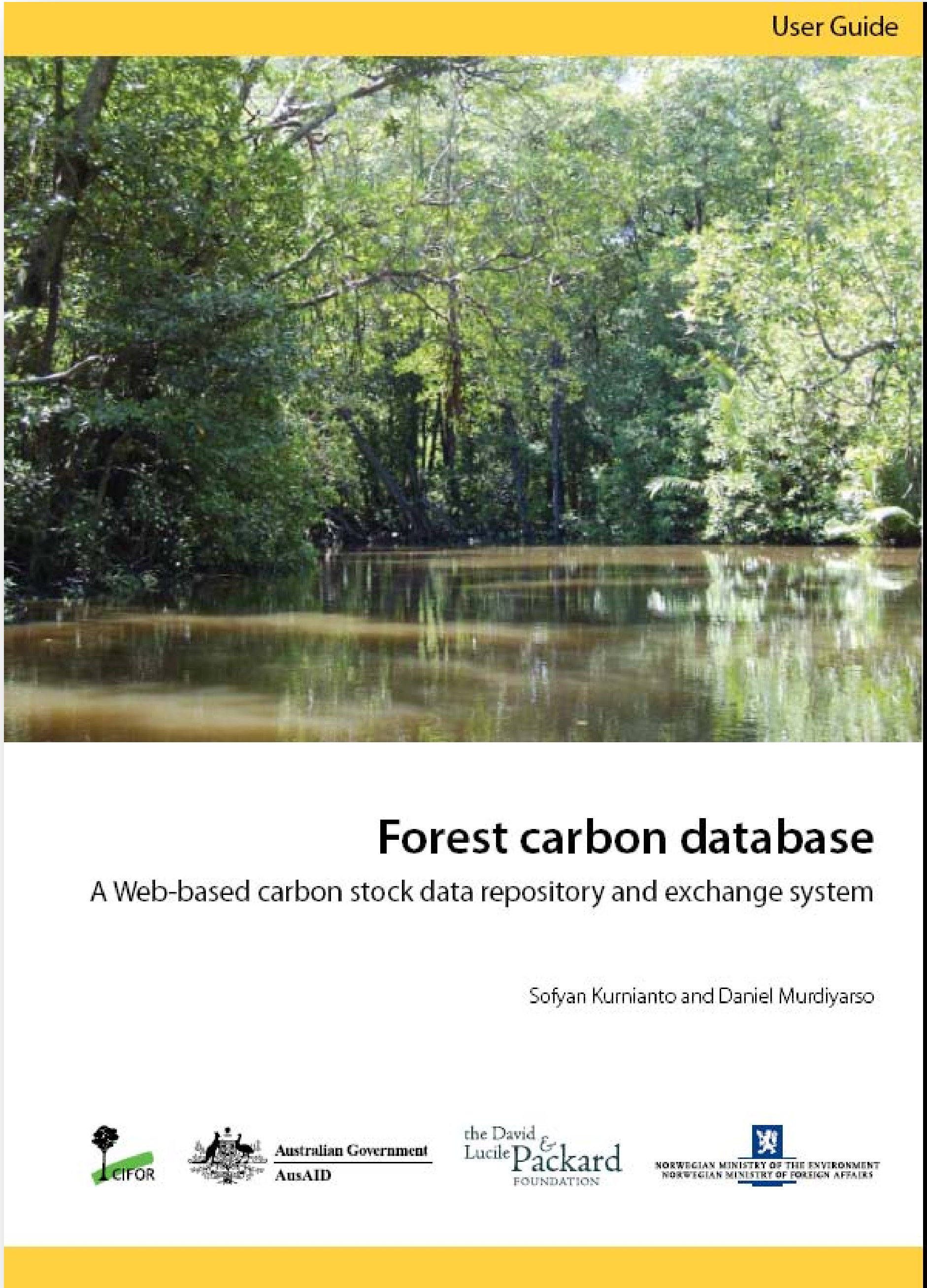
Sign in

- Forgot your password ?
- Want to register ?

PSP network in Indonesia



FORDA THINKING beyond the canopy CIFOR



The alpha version

- Accommodates 5 carbon pools (IPCC 2003)
- Providing calculator and repository system
- Allowing data exchange among users
- Point data

Landing page for contributors

Guide for contributor

Thank you for your contribution to the Global Comparative Study on REDD+ carbon stock database. By clicking on the commands on the right side of this page, you can carry out the following actions.

Add new site

You can add data on new sites to the database. The system guides you through the steps to configure and upload your data sets to the database.

- Each unique site is identified using latitude and longitude coordinates.
- You can input carbon stock data for each site for several years by using the 'Duplicate site' feature (access this feature through 'View my sites' once you have already entered original data for the site).

View my sites

Through this page, you can view, edit and duplicate any data that you have already entered.

View sites

Through this page, you can view data sets entered by other contributors.

View my profile

Use this command to view your own profile.

Edit profile

You can change all information in your profile except your user name.

Change password

Use this command to make a new password.

Mr Sofyan Kurnianto

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- Add new site
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- Log out

Registration

Registration

Step 1 Personal information | Step 2 Institutional information | Step 3 Data information | Step 4 Disclaimer

Personal information

Registration

Step 1 Personal information | Step 2 Institutional information | Step 3 Data information | Step 4 Disclaimer

Institutional information

Registration

Step 1 Personal information | Step 2 Institutional information | Step 3 Data information | Step 4 Disclaimer

Data information

* required field

Type of data: *

Species data	◉ Yes	○ No
Diameter at breast height	◉ Yes	○ No
Wood density	◉ Yes	○ No
Soil carbon stock	◉ Yes	○ No
Wood debris	◉ Yes	○ No

Agreement

Disclaimer

* required field

Data Exchange Agreement

CIFOR's GCS-REDD Data and Information Exchange Mechanism is a non commercial service with high standards of data management and structuring to maximize sharing of data, ideas, strategies and reporting endowed to governmental/ non-governmental partner organizations, multilateral operations, and interested person. Data access will enable agencies and other related partner organizations to fully participate in this mechanism and benefit from lessons learned of the GCS-REDD.

Accessible Product:

Data exchange mechanism in public domain meant for sustainable development of the national REDD's strategy endowed by CIFOR's GCS-REDD Data and Information Sharing Policy.

Advantages of being a member:

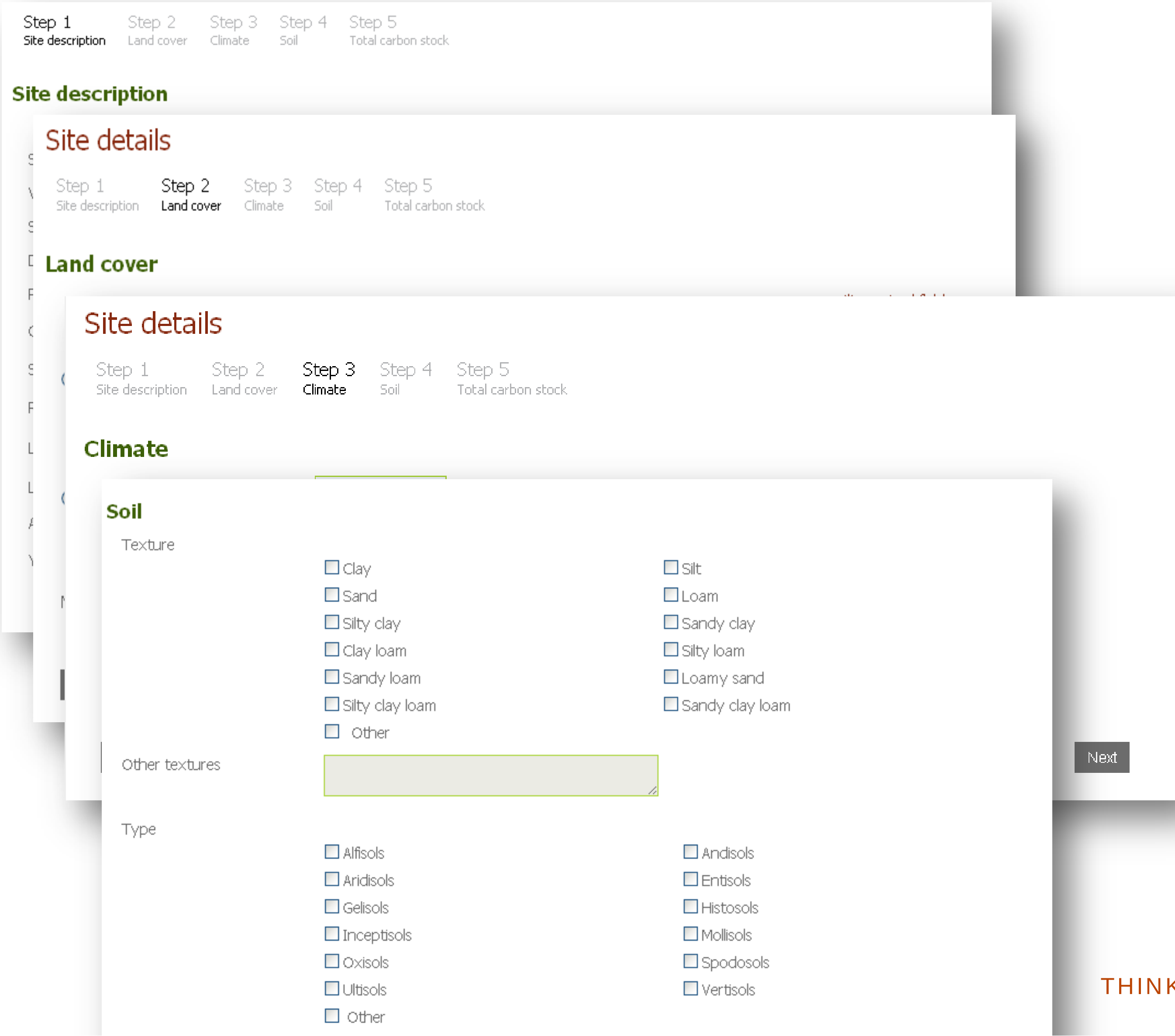
1. To reduce costs by avoiding expensive duplicate data collection efforts by making known what data have been collected so that additional resources are not spent to gather essentially the same information.
2. To provide ready access to data that cannot be readily replicated e.g. large surveys that are too expensive to replicate.

☑ I accept *

Please type the code shown: *

Try a new code | YEKFT

Create site’s database



Calculated C-stocks

Living biomass pools

Import and calculate biomass value Upload Excel file

Trees *	Biomass (Mg/ha)	Carbon fraction (%)	Carbon stock (Mg C/ha)
Total	502.49	50	251.245

Dead biomass pools

Import and calculate total woody debris value Upload Excel file

Woody debris	Biomass (Mg/ha)	Carbon fraction (%)	Carbon stock (Mg C/ha)
Fine woody debris		50	
Coarse woody debris		50	
Total	25.39	50	12.695

Upload raw data for understorey and litter Upload Excel file

Understorey and litter	Biomass (Mg/ha)	Carbon fraction (%)	Carbon stock (Mg C/ha)
Total	21.23	50	10.615

Below ground

Roots *	Biomass (Mg/ha)	Carbon fraction (%)	Carbon stock (Mg C/ha)
Total	99.19	50	49.595

Appendix 1. Allometric equations to estimate the aboveground biomass of trees used in this database

Site	Precipitation	Temperature	Type of forest	Species	Equation for estimating AGBT [a]	References
Pan-tropical	<1500 mm		Dry forest	Mixed Dmax[b] = 63.4 cm	$0.112\ (\rho D^2H)0.916$	Chave *et al.* (2005)
					$\rho \exp(-0.667 + 1.784 \ln(D) + 0.207(\ln(D))^2 - 0.0281 (\ln(D))^3)$	
	1500–3500 mm		Moist forest	Mixed Dmax = 138 cm	$0.0509\ \rho D^2H$	
					$\rho \exp(-1.499 + 2.148 \ln(D) + 0.207(\ln(D))^2 - 0.0281 (\ln(D))^3)$	
			Mangrove moist forest	Mangroves Dmax = 42 cm	$0.0509\ \rho D^2H$	
					$\rho \exp\ (-1.349 + 1.98 \ln(D) + 0.207(\ln(D))^2 - 0.0281\ (\ln(D))^3)$	
	>3500 mm; no seasonality		Wet forest	Mixed Dmax = 133.2 cm	$0.0776\ (-D^2H)^{0.94}$	
					$\rho \exp(-1.239 + 1.98 \ln(D) + 0.207(\ln(D))^2 - 0.0281(\ln(D))^3)$	
Tropics			Wet forest	Mixed D[c] = 4–112 cm	$21.297 - 6.953(D) + 0.740(D^2)$	Brown (1997)
			Moist forest	Mixed D = 5–148 cm	$\exp[-2.289 + 2.649 \cdot \ln(D) - 0.021(\ln(D))^2]$	Brown (1997; in IPCC 2003)
Porce Region, Colombia	2078	22.7	Primary forest	Mixed D = 0.5–198 cm	$2.286 + 2.471 \ln(D)$	Sierra *et al.* (2007)
			Secondary forest	Mixed D = 0.9–40 cm	$-2.322 + 2.422 \ln(D)$	
East Kalimantan, Indonesia	2000	26	Lowland mixed dipterocarp	Dipterocarpus	$1.232 + 2.178 \ln(D)$	Basuki *et al.* (2009)

a. AGBT : aboveground biomass and trees

b. Dmax : maximum diameter at breast height

c. D : diameter at breast height

View my sites

List of my sites

Following is a list of sites for which you have already entered data.

Sort by: Carbon stock

Year	Site	Province	Country	Land cover type	Carbon stock (Mg C/ha)	Action
2009	Api api	North Sulawesi	Indonesia	Natural forest	983.30	Edit | Duplicate
2009	Jerumbun	Central Kalimantan	Indonesia	Natural forest	1,183.22	Edit | Duplicate
2009	Seluang	Central Kalimantan	Indonesia	Natural forest	401.23	Edit | Duplicate
2009	Simpang kancil	Central Kalimantan	Indonesia	Natural forest	803.11	Edit | Duplicate
2009	Sintuk	Central Kalimantan	Indonesia	Natural forest	1,238.58	Edit | Duplicate

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View other contributors' sites

List of all sites

Following is a list of all sites that have been entered into the database. Select the Site or Contributor name for more information.

Sort by: Carbon stock

Year	Site	Province	Country	Land cover type	Contributor	Carbon stock (Mg C/ha)
2009	Sintuk	Central Kalimantan	Indonesia	Natural forest	Sofyan Kurnianto	1238.58
2009	Jerumbun	Central Kalimantan	Indonesia	Natural forest	Sofyan Kurnianto	1183.22
2009	Peramuan	Central Kalimantan	Indonesia	Natural forest	Administrator of Forest Carbon Database	1061.00
2009	Api api	North Sulawesi	Indonesia	Natural forest	Sofyan Kurnianto	983.30
2009	Risam	Central Kalimantan	Indonesia	Natural forest	Administrator of Forest Carbon Database	977.53
2009	Simpang kancil	Central Kalimantan	Indonesia	Natural forest	Sofyan Kurnianto	803.11
2009	Seluang	Central Kalimantan	Indonesia	Natural forest	Sofyan Kurnianto	401.23

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Two recent publications

Opportunities for reducing greenhouse gas emissions in tropical peatlands

D. Murdiyarso[1], K. Hergoualc'h, and L. V. Verchot

Center for International Forestry Research, Jalan CIFOR, Situgede, Bogor 16115, Indonesia

Edited by Ruth S. DeFries, Columbia University, New York, NY, and approved October 12, 2010 (received for review October 22, 2009)

The upcoming global mechanism for reducing emissions from deforestation and forest degradation in developing countries should include and prioritize tropical peatlands. Forested tropical peatlands in Southeast Asia are rapidly being converted into production systems by introducing perennial crops for lucrative agribusiness, such as oil-palm and pulpwood plantations, causing large greenhouse gas (GHG) emissions. The Intergovernmental Panel on Climate Change Guidelines for GHG Inventory on Agriculture, Forestry, and Other Land Uses provide an adequate framework for emissions inventories in these ecosystems; however, specific emission factors are needed for more accurate and cost-effective monitoring. The emissions are governed by complex biophysical processes, such as peat decomposition and compaction, nutrient availability, soil water content, and water table level, all of which are affected by management practices. We estimate that total carbon loss from converting peat swamp forests into oil palm is 59.4 ± 10.2 Mg of CO_2 per hectare per year during the first 25 y after land-use cover change, of which 61.6% arise from the peat. Of the total amount (1,486 ± 183 Mg of CO_2 per hectare over 25 y), 25% are released immediately from land-clearing fire. In order to maintain high palm-oil production, nitrogen inputs through fertilizer are needed and the magnitude of the resulting increased N_2O emissions compared to CO_2 losses remains unclear.

drainage | respiration | gain-loss approach | stock-difference approach

PNAS | November 16, 2010 | vol. 107 | no. 46 | 19655–19660

nature geoscience

LETTERS

PUBLISHED ONLINE: 3 APRIL 2011 | DOI: 10.1038/NGEO1123

Mangroves among the most carbon-rich forests in the tropics

Daniel C. Donato[1]*, J. Boone Kauffman[2], Daniel Murdiyarso[3], Sofyan Kurnianto[3], Melanie Stidham[4] and Markku Kanninen[5]

Mangrove forests occur along ocean coastlines throughout the tropics, and support numerous ecosystem services, including fisheries production and nutrient cycling. However, the areal extent of mangrove forests has declined by 30–50% over the past half century as a result of coastal development, aquaculture expansion and over-harvesting[1-4]. Carbon emissions resulting from mangrove loss are uncertain, owing in part to a lack of broad-scale data on the amount of carbon stored in these ecosystems, particularly below ground[5]. Here, we quantified whole-ecosystem carbon storage by measuring tree and dead wood biomass, soil carbon content, and soil depth in 25 mangrove forests across a broad area of the Indo-Pacific region—spanning 30° of latitude and 73° of longitude—where mangrove area and diversity are greatest[4,6]. These data indicate that mangroves are among the most carbon-rich forests in the tropics, containing on average 1,023 Mg carbon per hectare. Organic-rich soils ranged from 0.5 m to more than 3 m in depth and accounted for 49–98% of carbon storage in these systems. Combining our data with other published information, we estimate that mangrove deforestation generates emissions of 0.02–0.12 Pg carbon per year—as much as around 10% of emissions from deforestation globally, despite accounting for just 0.7% of tropical forest area[6,7].

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